12-1989

Athletic Park for Cornell University

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Narburgh, Kirk

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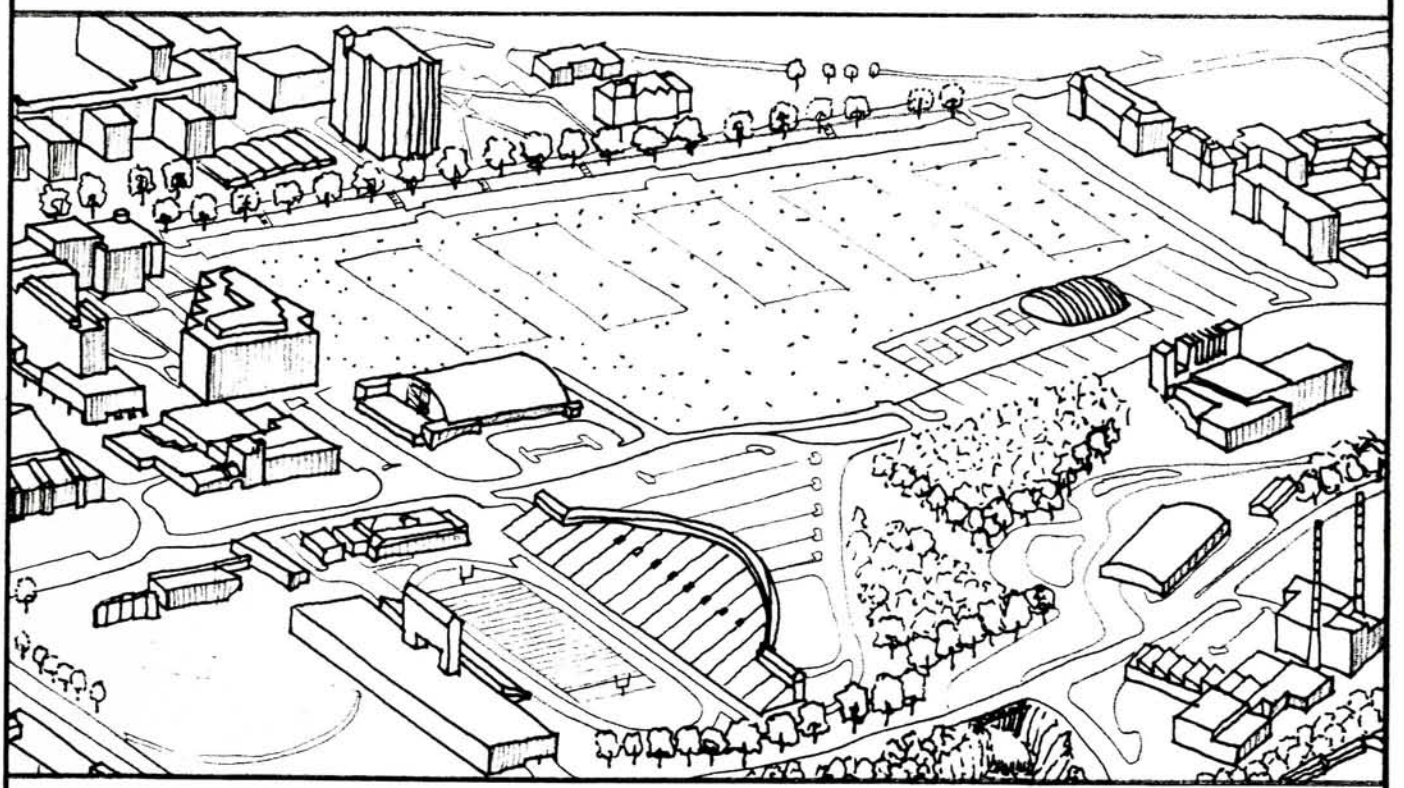
FINAL THESIS BRIEF

ATHLETIC PARK
FOR
CORNELL UNIVERSITY



PROPOSAL BY:

KIRK NARBURGH
M. ARCH- GRAD
DECEMBER 11, 89

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A. Statement of Thesis

STATEMENT OF THESIS

"Architecture is the process of enclosing and sheltering recovery and at the same time fulfillment and deepening of the individual." -Oswald Mathias Ungers, Architecture As Theme.

The intention of this thesis investigation is to explore, through architectural form, the ideals of architectural assemblage. There will be an attempt at achieving an architecture that is in constant dialogue with the complex for which it was created. The theme is ultimately derived from the environment in which it is to be utilized, and develops its form and language out of the context. The architectural assemblage will be an attempt to find a dialogue with tradition; with historically formed values of campus planning and the enhancement of that architectural form in order to achieve a uniform whole.

In more specific terms this investigation is intended to explore the possibilities of a homogeneous and complete work of architecture in which the collegiate sport ideal is unfolded. The contradictions inherent in the different building types will be "assembled" (integrated) so that we see the buildings as a whole complex of related functions. The theme of assemblage is an attempt at a unitary image of different relations, which in the end, allows for the ideals of the facility to unfold.

B. Thesis Description

THESIS DESCRIPTION

Project Title: Collegiate Athletic Park for Cornell University.

The thesis project is centered around the idea of consolidating the sports complex at Cornell University. This will include an evaluation of environmental determinants (generators of architectural form) to formulate a master plan for the sports complex and a design proposalfor one of the major architectural facilities within the park (admin./education bldg., natatorium, racquet facility, etc...)

The scope at a larger more "urban" scale is about the design of a master plan for the sports complex around alumni field. A proposal that creates a park for collegiate sports; a physical education "quad" that serves not only as a practice facility for athletes, but also as a center for collegiate sports education and administration at Cornell University.

At the more building scale, there is a need for the addition of a pool facility at or near the existing fieldhouse, a gymnastics arena, a tennis/racquet facility, and an administration center. Primary emphasis will be placed in their placement and development programmatically. The design ideas will incorporate their edge making qualities along the side of alumni field, unified by architectural ideals, and creating individual yet integrated intentions in the overall quality of the sports quad.

Subsequent emphasis will be placed in the design of the individual facilities. The education/administration building offers the greatest programmatic diversity. The building includes both private and public functions as well as instructional spaces. Yet, according to the development of the thesis project it may be found enriching to further develop one of the other facilities in terms of structure, ventilation, large space requirements, etc...

Overall,the master planning concept and individual building systems will be designed to form an enriching environment. The contradictions of the site and building types will be accepted and recognized, somehow turning them into the paste that will ultimately bind the overall sport image into a coherant ideal.

C. Goals of Thesis

GOALS OF THESIS

The primary goal of the thesis is to investigate and resolve the architectural assemblage of sports facilities into a cohesive image of the athletic complex at Cornell University (whether the assemblage is achieved through similar style, structural intentions, materials, etc.. is an issue that will be uncovered in the thesis investigation). The issue of assemblage is an attempt to create a visual order that is unified, yet allows the part (different bldg. types) to be expressed. The assemblage will in turn help to define the edges of the site and reinforce the spatial quality of the now internalized practice park (quad) area.

The consolidation of the sports complex perpetuates the investigation of how to address the problems associated with the pressures exerted by the existing Cornell campus. The location of the site, in proximity to the main campus, tends to reinforce the necessity for "urban" space (quad) making. A planning strategy based on the historical american campus tradition (like those used in the earliest land-grant colleges and found at Cornell).

As seen in the University of Virginia, the part and the whole exist in a suggestive balance. There exists a great central space defined by colonnades and pavillions. This academical village expresses the idea of society and the city - a coherant idea of "urban" space making. This type of architectural assemblage exists in a somewhat less dramatic form at Cornell and at many other universities throughout the United States. It is important to somehow address the issue of quad making in the overall goal of creating the athletic park at Cornell.

Another primary investigation will occur in the development of the athletic facilities and the administration/education building. The building will serve as a showcase of the achievement of sports excellence at Cornell over the past 100+ years. In addition it will serve as the headquarters of sports administration and as a forum for sports society past and present. The contradictions associated with the site, context, programmatic elements, and the primary assemblage of the sports park will add pressures that will

determine how this building and the other facilities ultimately develop.

The design issues involved with the actual arenas for sports will also be investigated. The programmatic nature of these athletic building types allow for little manipulation in terms of plan and section. The issues will be involved with how they develop within the image of the athletic park (facade, structure, massing, etc...) and how they begin to emerge in balance with the ideals uncovered and utilized within the athletic park complex.

From the earliest colleges of the colonial period, to the land-grant universities, the American campus has been seen as a city with its oasis of urban spaces (quads). Utilizing the programmatic elements of the sports complex, the emphasis will be placed on teh creation of this oasis. The nature of the site itself (flat, proximity to main campus, etc...) reinforces the issues of quad making. Ultimately, the investigation of the architectural assemblage will provide a coherant athletic park, bound by a clear architectural image and formed by its related athletic facilities and center of sports education and administration.

D. Expectations

EXPECTATIONS

The final thesis proposal will address the ideas of space making associated with college campus planning at Cornell University. The result will have resolved the major contradictions and formed a coherent image of the athletic park. The issues investigated and resolved will result in a cohesive ideal for teh sports quad; somehow assembling a loose arrangement of freestanding buildings and joining them with landscape elements to form an almost urban space. The expectation for the athletic park is to ultimately become a beautiful campus space which is clearly defined by landscape elements and buildings coordinated in their overall architectural image (which will be uncovered) of sports at Cornell University.

A final design proposal will be made for one of the athletic park's facilities; possibly the administration/education building, which tends to be the focus of the athletic park. The expectation is that the diverse program will have been worked out and united to produce a useful architectural place for sports education and administration at Cornell. The building to be developed will need to adhere to the pressures of the place, yet provide a unique structure within the tradition of construction at Cornell and within the image of the architectural assemblage of the athletic park.

E. Site Selection

SITE SELECTION

The site under consideration for the sports park is the area along the edges of the existing alumni practice fields. The central feature of the overall area is alumni field, a major open space which has the possibility of becoming a very pleasing campus space through the coordinated design of teh different athletic facilities.

As a site for the Cornell athletic park, the site possesses many positive aspects as well as some problems:

ALUMNI FIELD SITE-

In its favor:

-Close to center campus; access for the campus community, especially for physical education classes is very practical.

-Associated with other existing athletic facilities; reinforcing environment, use of support facilities (lockers, showers), management facilitated, etc...

-All necessary utilities and support services are available.

-The actual field area is flat requiring no fill and almost no grading. There are bermed and sloping areas at the North and East end of the field. The east sloping condition can be utilized in the sectional development of the sports education/admin. building if it is located in this area.

Problems:

-Site is somewhat restricted.

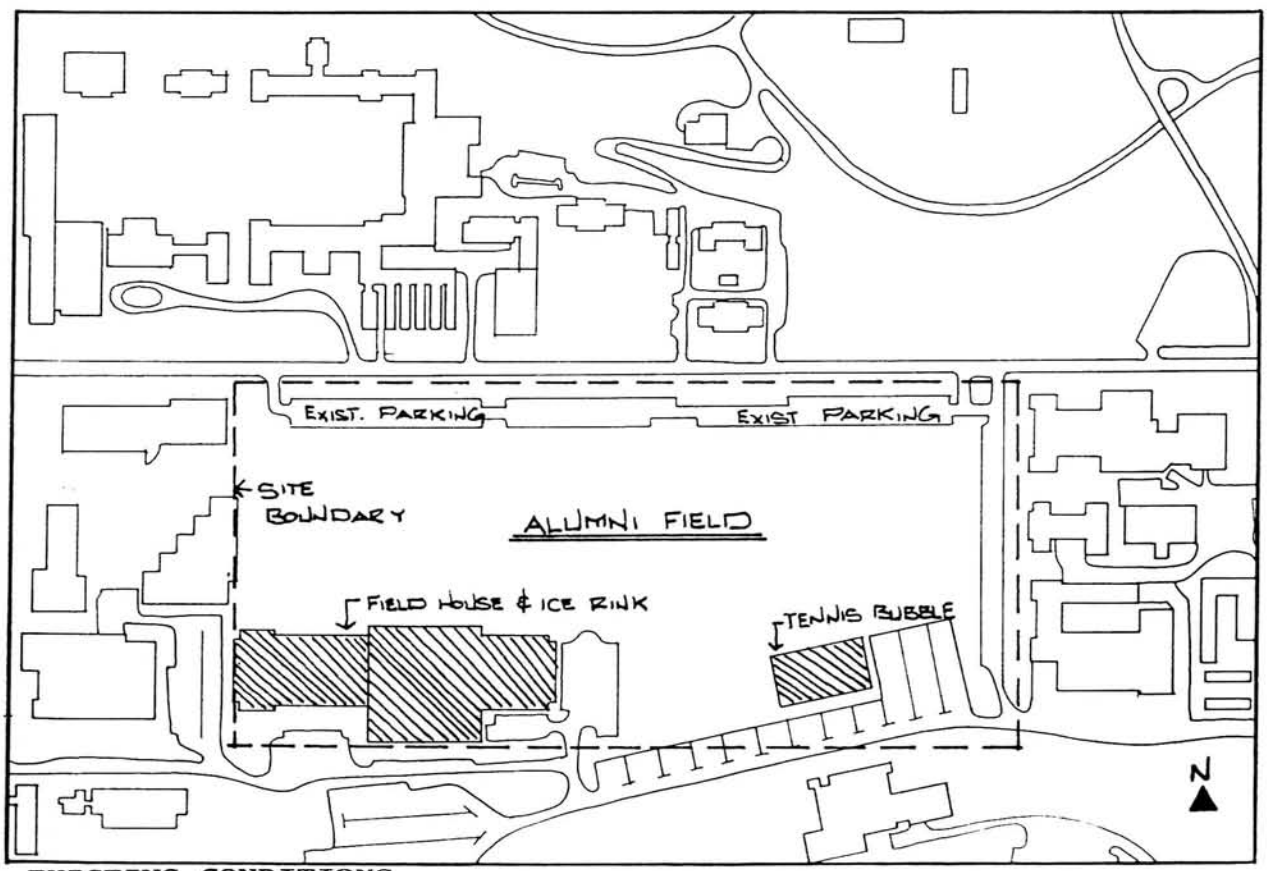
-Only limited parking available adjacent to new buildings. Building on existing parking requires replacement elsewhere.

-Existing synchrotron tunnel causes problems for deep excavation.

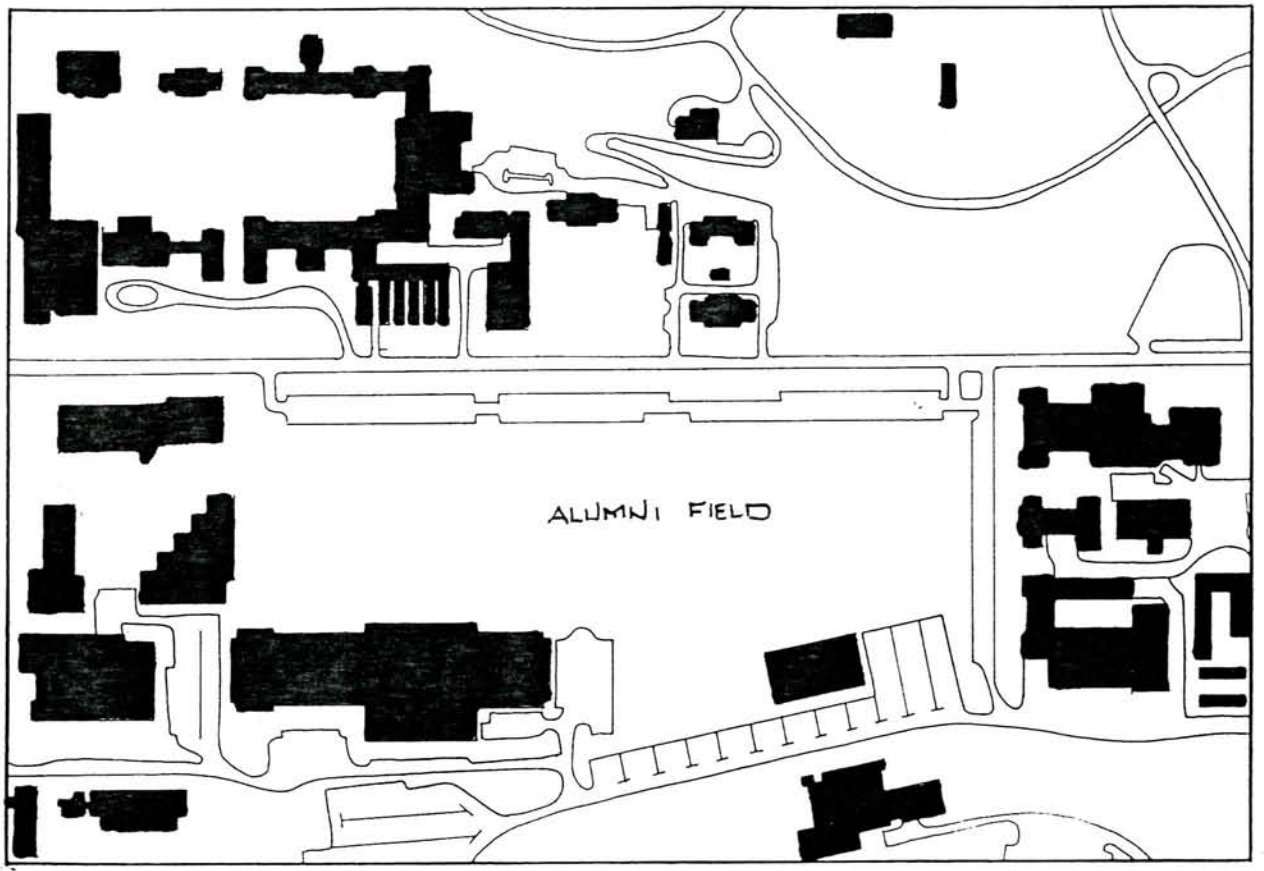
The site is close to the agriculture quad and is surrounded by a mix of new brick buildings and older brick and stone land-grant college buildings. The existing buildings directly associated with alumni field utilize a loggia system on their facades. This image might be useful in creating a "continuous" facade that could unify each building and enclose the practice fields on the perimeter.

The following drawings detail certain site conditions related to this thesis:

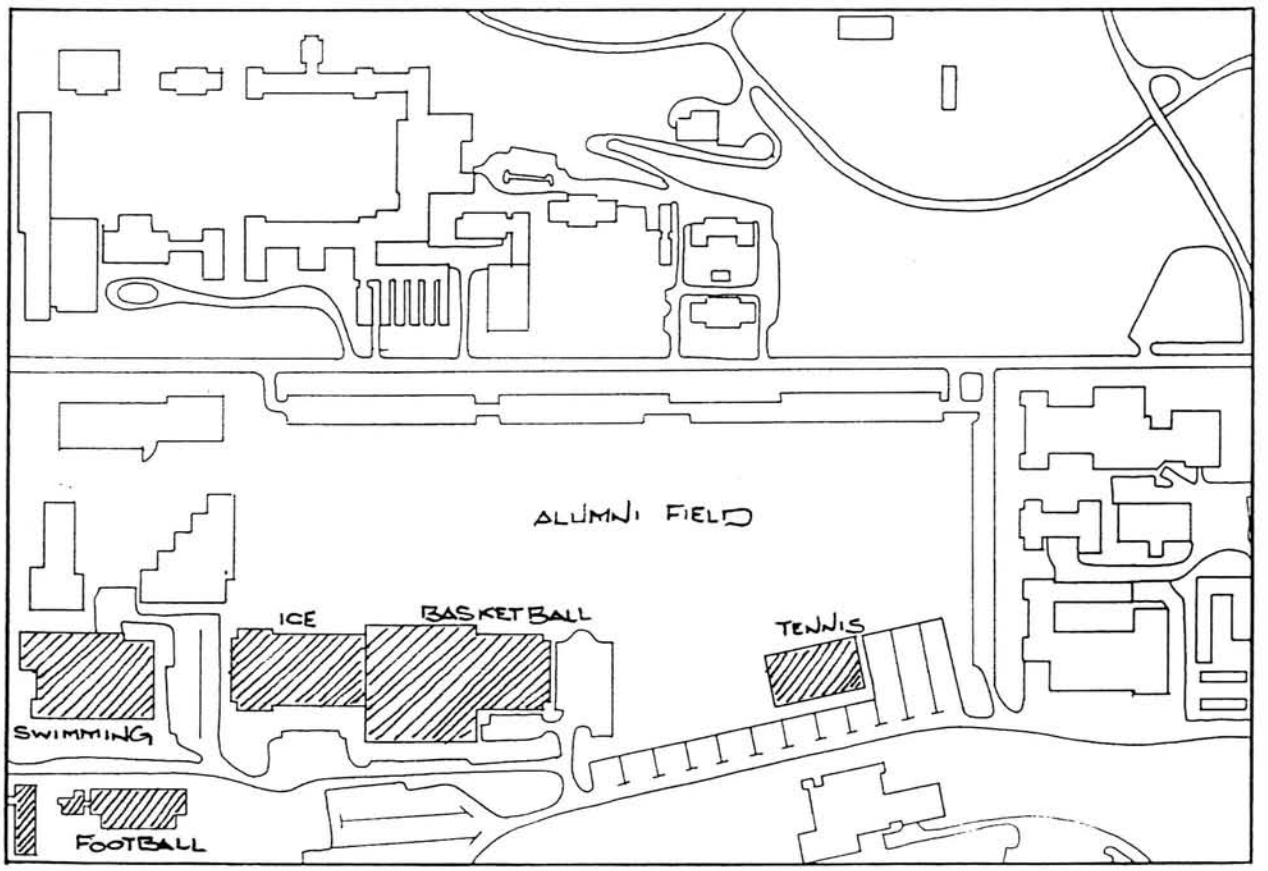
-Existing conditions/Site area
-Figure ground existing buildings
-Existing sports facilities
-Pedestrian movement
-Vehicular access
-Slope/Grade conditions
-Major utilities



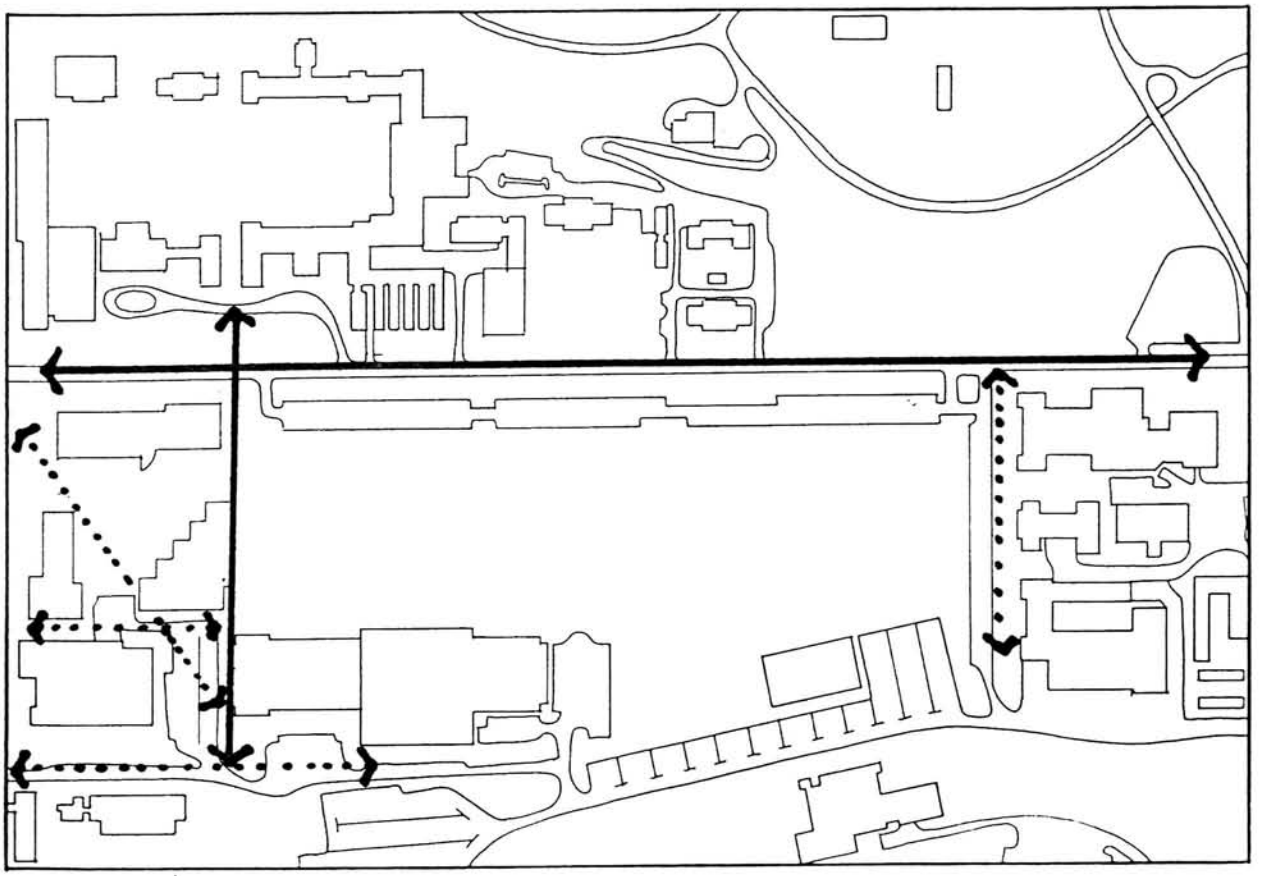
EXISTING CONDITIONS



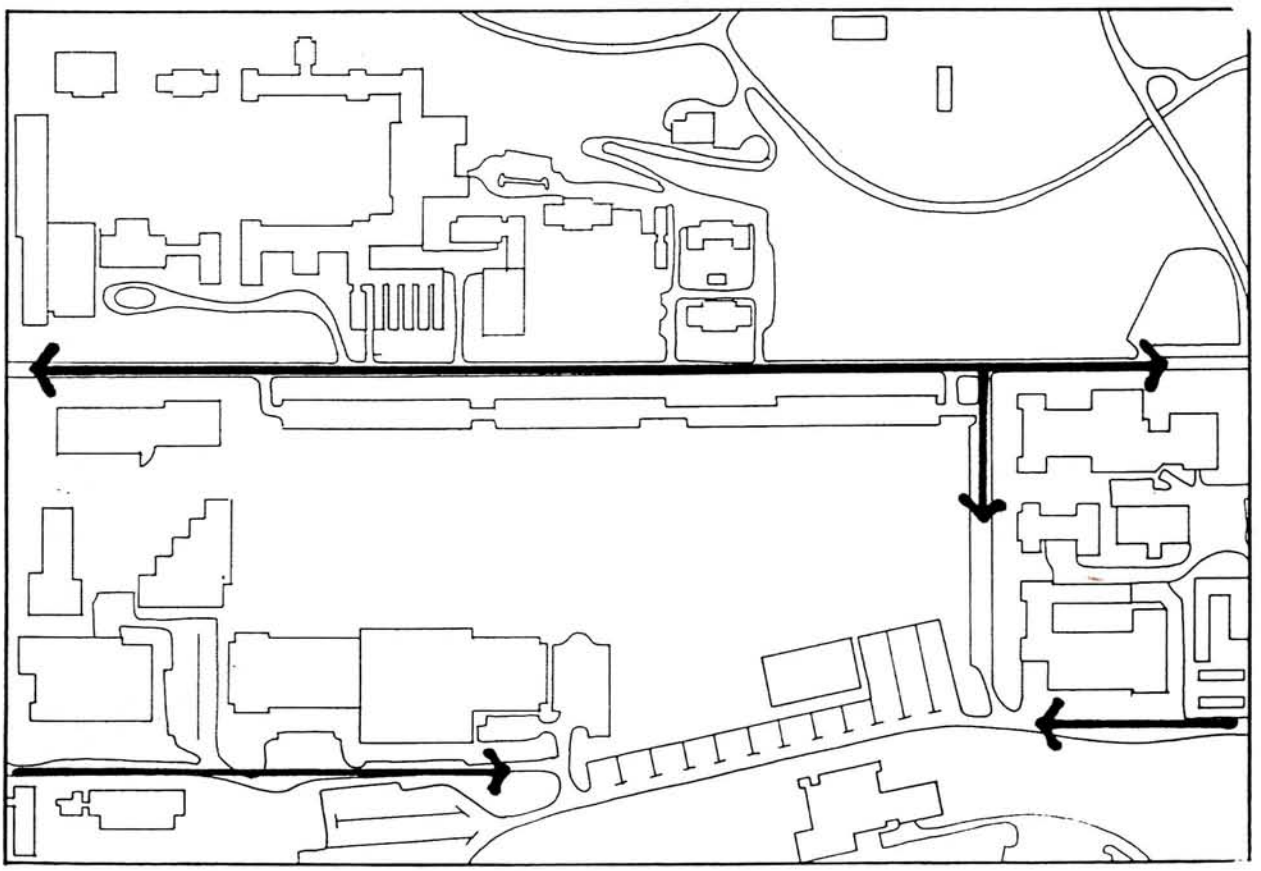
FIGURE/GROUND



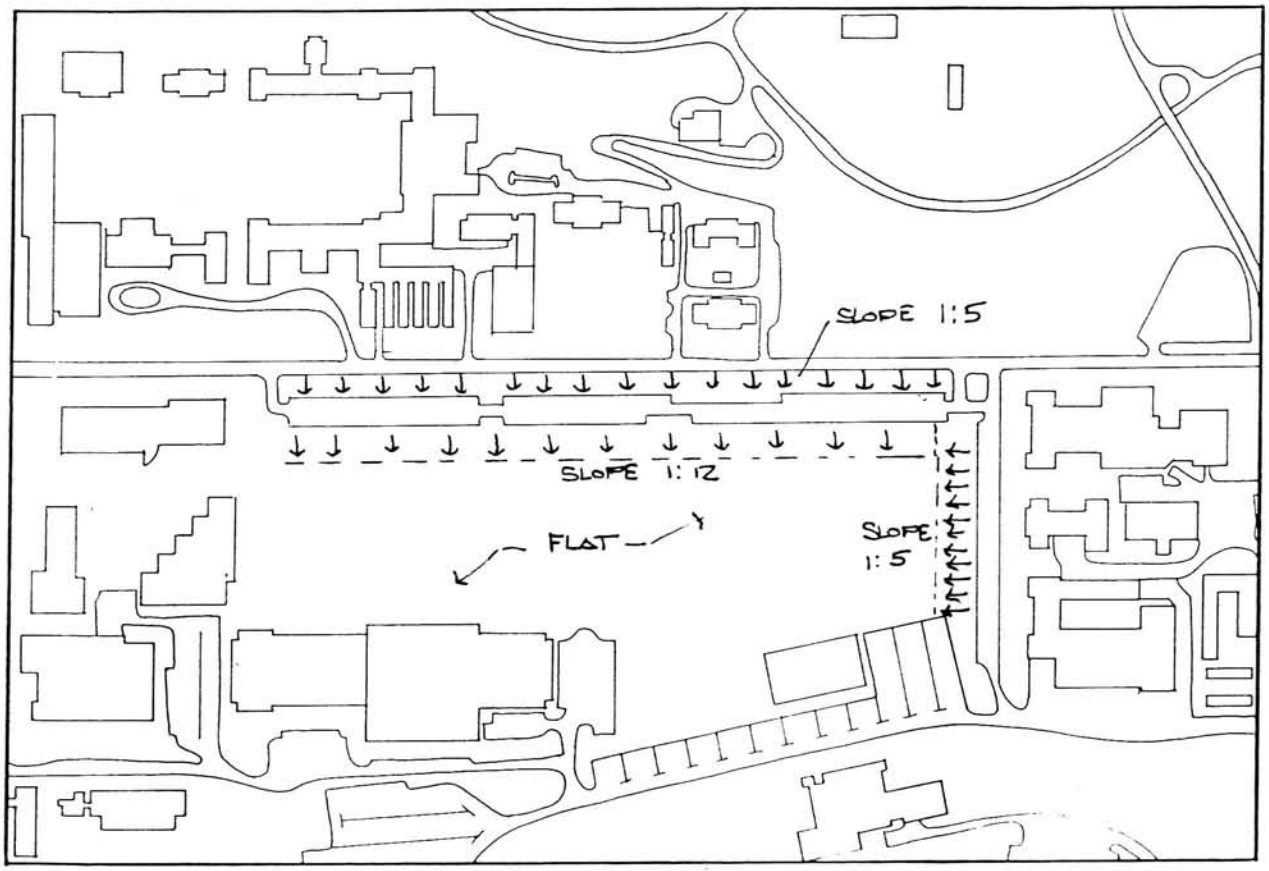
EXISTING SPORTS



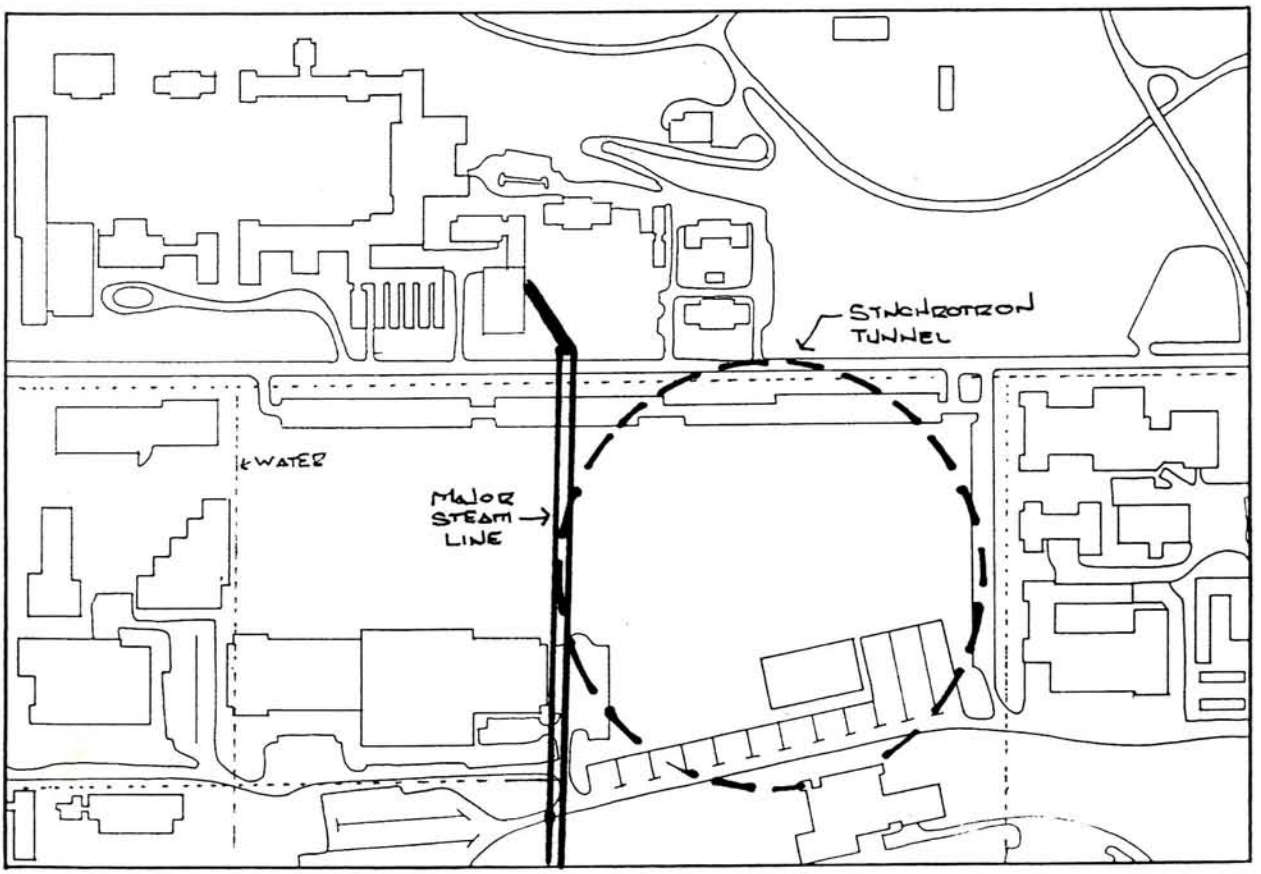
PEDESTRIAN MOVEMENT



VEHICULAR MOVEMENT



SLOPE



UTILITIES

SITE ANALYSIS CONCLUSIONS

The site under consideration for the location of Cornell universities athletic park, has many beneficial aspects for the support and overall success of the various facilities to be utilized. The site is close to the center of campus and is accessible to everyone. It is associated with other existing athletic facilities and is a practical central location for the universities physical education classes. Also, because of the flat nature of the existing playing field area there is little need for extensive gradework. The existing sloped conditions actually support sectional design possibilities in the development of the proposed facilities.

Due to the restrictive nature of the surrounding existing site conditions, future expansion within this area is difficult. Again, because of the limited area, and probability of building on existing parking areas, parking will be difficult to include (in proximity to the facilities) in any significant amounts. Finally, the synchrotron tunnel could cause problems for any deep excavated areas (underground parking, sunken pool area, etc...).

Overall, the positive aspects of the alumni field area far outweigh those minor restrictions. In planning the location of Cornell Universities athletic park, it is my conclusion that the alumni field site is the most appropriate area to be utilized.

F. Program Selection

PROGRAM SELECTION

Proposed facilities include: the administration/education building,the gymnastics arena, the natatorium, the tennis/racquet facility, and the practice fields (not built environments). This is by no means an all inclusive and unchangeable listing. It is an attempt at creating a palette of useable programmatic pieces that may or may not all be used in the investigation of the thesis. It may be found necessay to include some academic pieces along tower road but at this point these buildings are not included in the initial program selection.

All of the proposed facilities are necessary in the improvement of the sports complex at Cornell. In the following pages I have established total sqare footages needed for each of the separate facilities. I have also outlined certain considerations that will need to be evaluated in the development of the programmatic pieces. In the following lisings it will be easy to see the diverse and interesting mix of spaces that need to be incorporated in each of these facilities. How these spaces ultimately fit and work together to form cohesive structures will be analyzed and investigated in this thesis.

GYMNASTICS ARENA

PROGRAM SPACE REQUIREMENTS

Gymnastics Arena (120x150)- (seating for ± 1500)	18,000 sf
Support Facilities:	
Lockers (teams)- Men: 30 lockers	360 sf
Women: 30 lockers	360 sf
Visiting Men: 30 lockers	360 sf
Visiting Women: 30 lockers	360 sf
Showers/Drying/Toilets:	
Men	360 sf
Women	600 sf
Training/First Aid	600 sf
Control Office	300 sf
Officials Lockers and Facilities	360 sf
Equipment/Laundry	500 sf
Mechanical	500 sf
Gymnastics Storage	1,000 sf
Miscellaneous Storage	500 sf
Coaching Offices (8 needed)	800 sf
SUBTOTAL (net sf) (not including gym area)	6,960 sf
NET TO GROSS RATIO (30%) (support facilities sf)	2,000 sf
TOTAL GROSS SQUARE FOOTAGE	26,960 sf

NATATORIUM

PROGRAM SPACE REQUIREMENTS

Pool Area (160x200) (50M, 8 lanes with diving) (seating:1500- 2000)	32,000 sf
Support Facilities	
Lockers (teams)- Men:30 lockers	360 sf
Women:30 lockers	360 sf
Lockers (gen)- Men:60 lockers	720 sf
Women:60 lockers	720 sf
Showers/Drying/Toilets:	
Men	540 sf
Women	900 sf
Training/First Aid	300 sf
Control Office	300 sf
Offices Staff (8 needed)	800 sf
Storage (Misc.)	500 sf
Chemical Storage	100 sf
Mechanical (pool) (taken as 45% of water area)	5,000 sf
Mechanical (bldg.)	1,000 sf
Equipment/Laundry	1,000 sf
SUBTOTAL (net sf) (not including pool area)	12,600 sf
NET TO GROSS RATIO (25%)	3,000 sf
TOTAL GROSS SQUARE FOOTAGE	47,600 sf

TENNIS FACILITY

PROGRAM SPACE REQUIREMENTS

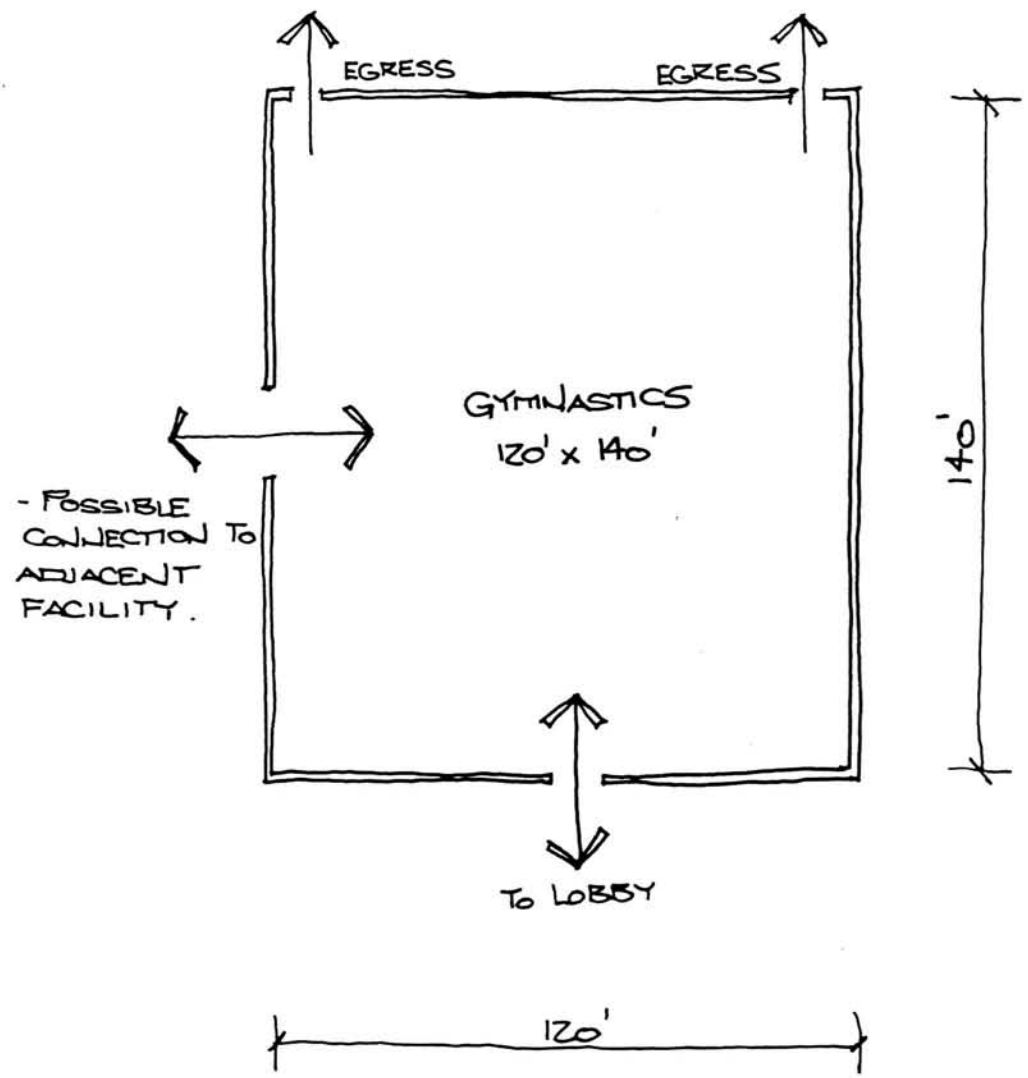
Six Indoor Courts (60x120) (including spacing)	43,000 sf
Six Outdoor Courts (60x120) (including spacing) (not included in sf of bldg.)	43,000 sf
Possible inclusion of:	
Six Racquetball Courts (20x40)	4,800 sf
14 Squash Courts (18.5x32)	8,200 sf
Support Facilities	
Lockers (teams)- Men:15 lockers	200 sf
Women:15 lockers	200 sf
Lockers (gen.)- Men:60 lockers	720 sf
Women:60 lockers	720 sf
Lounge/Spectators	2,500 sf
Control Office	300 sf
Staff Offices (10 needed)	1,000 sf
Training/First Aid	300 sf
Tennis Storage	500 sf
Misc. Storage	500 sf
Showers/Drying/Toilets:	
Men	450 sf
Women	750 sf
Mechanical	2,000 sf
SUBTOTAL (net sf) (not including court spaces)	10,150 sf
NET TO GROSS RATIO (30%)	3,000 sf
TOTAL GROSS SQUARE FOOTAGE	69,150 sf

ADMINISTRATION/EDUCATION BUILDING

PROGRAM SPACE REQUIREMENTS

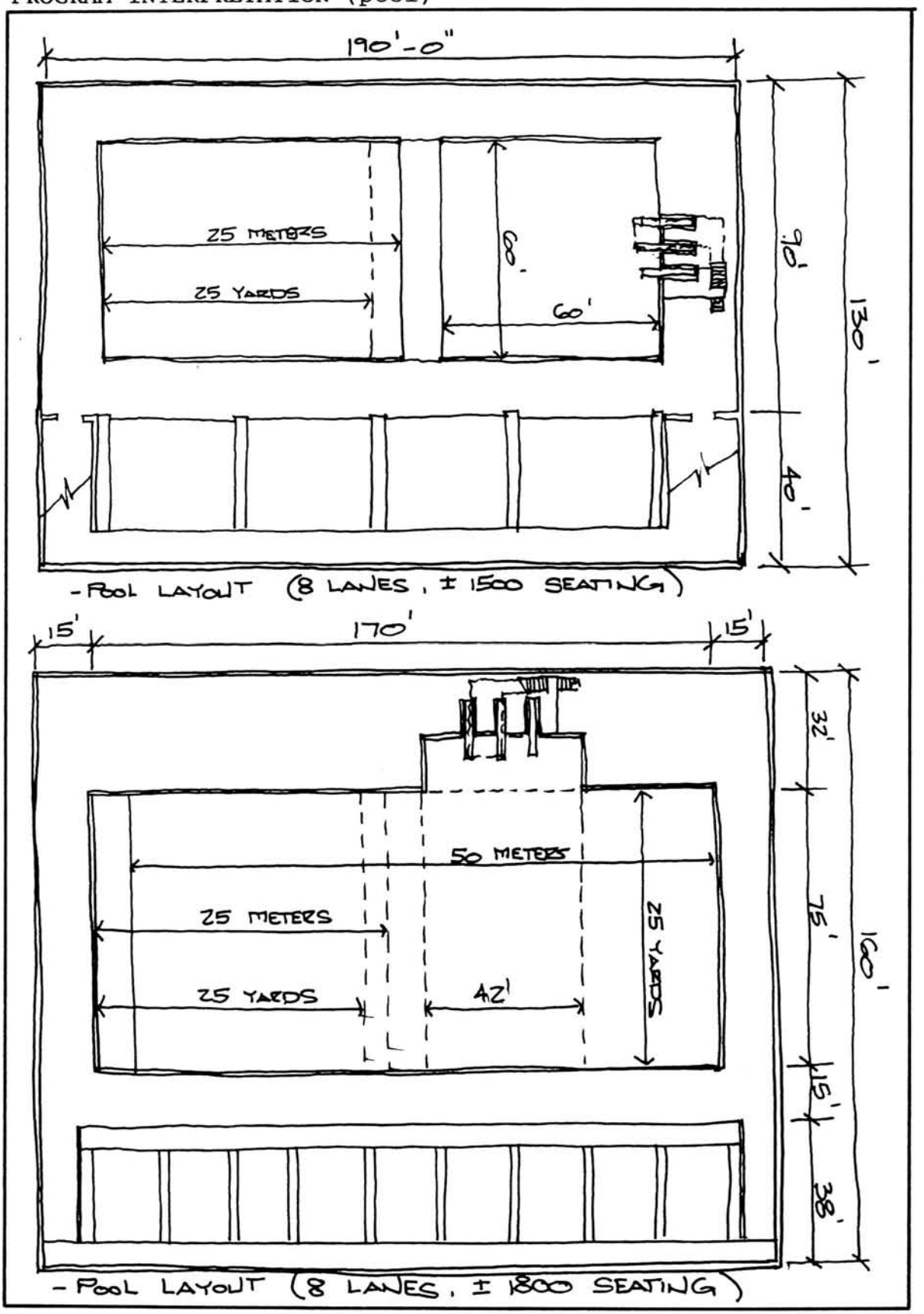
Lecture/Film Viewing Spaces:	
Large Group (150-200 people)	4,000 sf
Small Group (2), (40-50 people)	3,000 sf
Viewing Rooms (3), (20 people)	2,000 sf
Banquet/Exhibition Hall	6,000 sf
Kitchen/related storage	2,000 sf
Trophy/Awards Hall	3,000 sf
Lounge	1,500 sf
Lobby	1,000 sf
Administrative Offices	
Athletic Director	300 sf
Assistant AD	200 sf
Secretaries/Reception	500 sf
Waiting Area	200 sf
Conference Rooms (2)	800 sf
Department Offices	
Secretaries/Reception	1,000 sf
Waiting Area	500 sf
General Offices (40-50)	4,500 sf
Mechanical/Storage (basement)	
SUBTOTAL (net sf)	30,500 sf
NET TO GROSS RATIO (30%)	10,000 sf
TOTAL GROSS SQUARE FOOTAGE	40,500 sf

PROGRAM INTERPRETATION

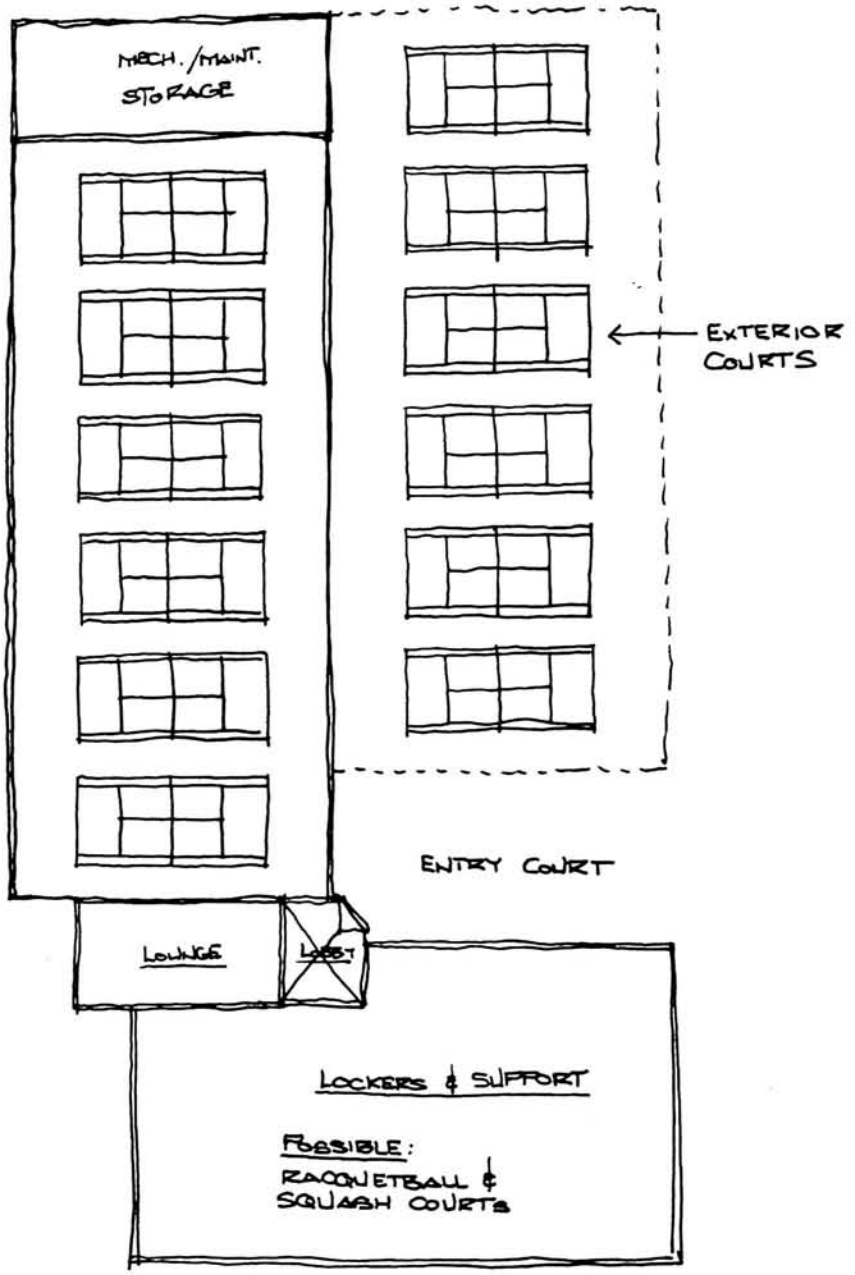


- GYMNASTICS REQUIREMENTS
- NEED FOR SPECTATOR SEATING (AMT. ?)

PROGRAM INTERPRETATION (pool)



PROGRAM INTERPRETATION (tennis)



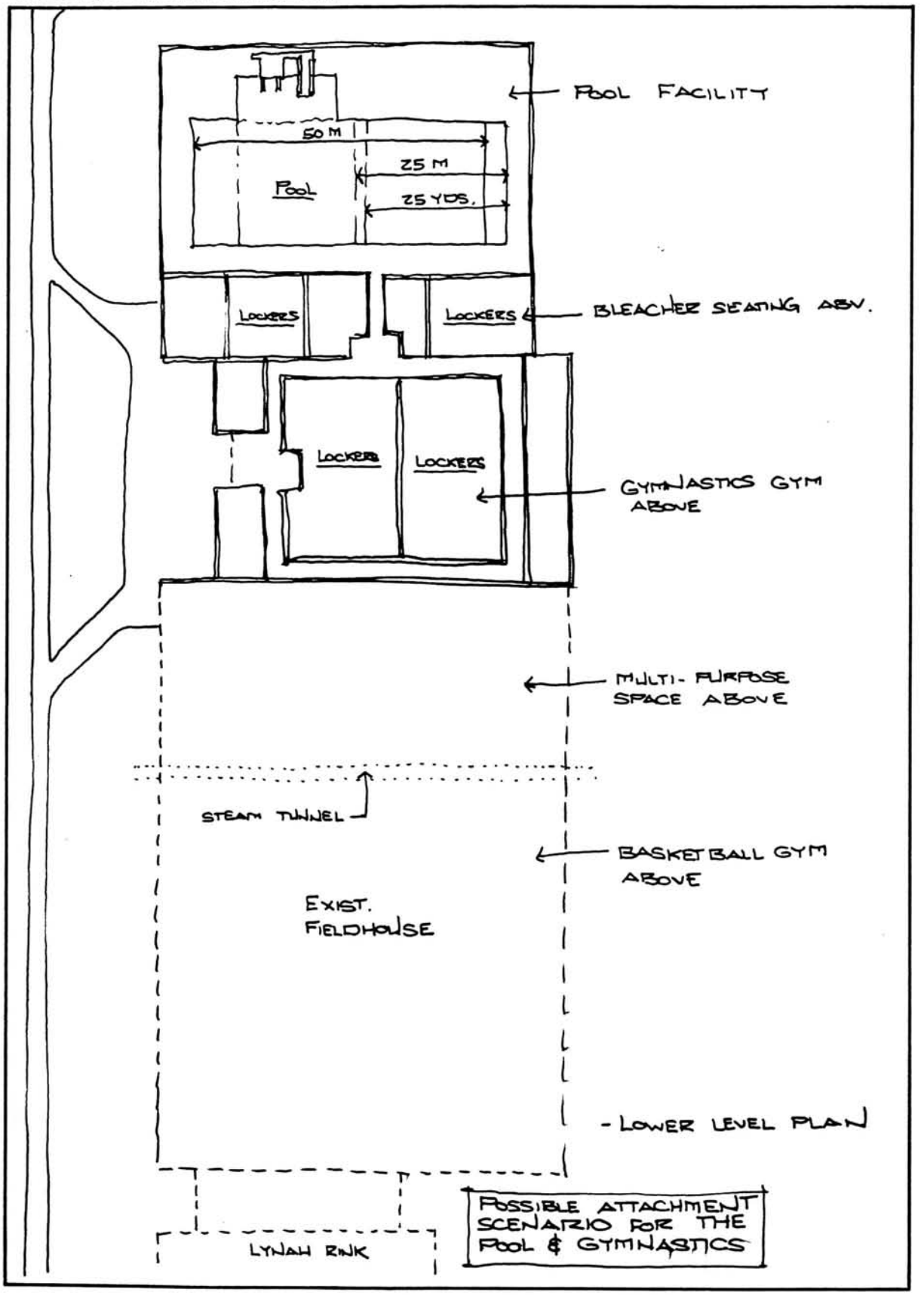
POSSIBLE TENNIS FACILITY LAYOUT

- 6 INDOOR, 6 OUTDOOR COURTS
- UTILIZE NORTH/SOUTH ORIENTATION

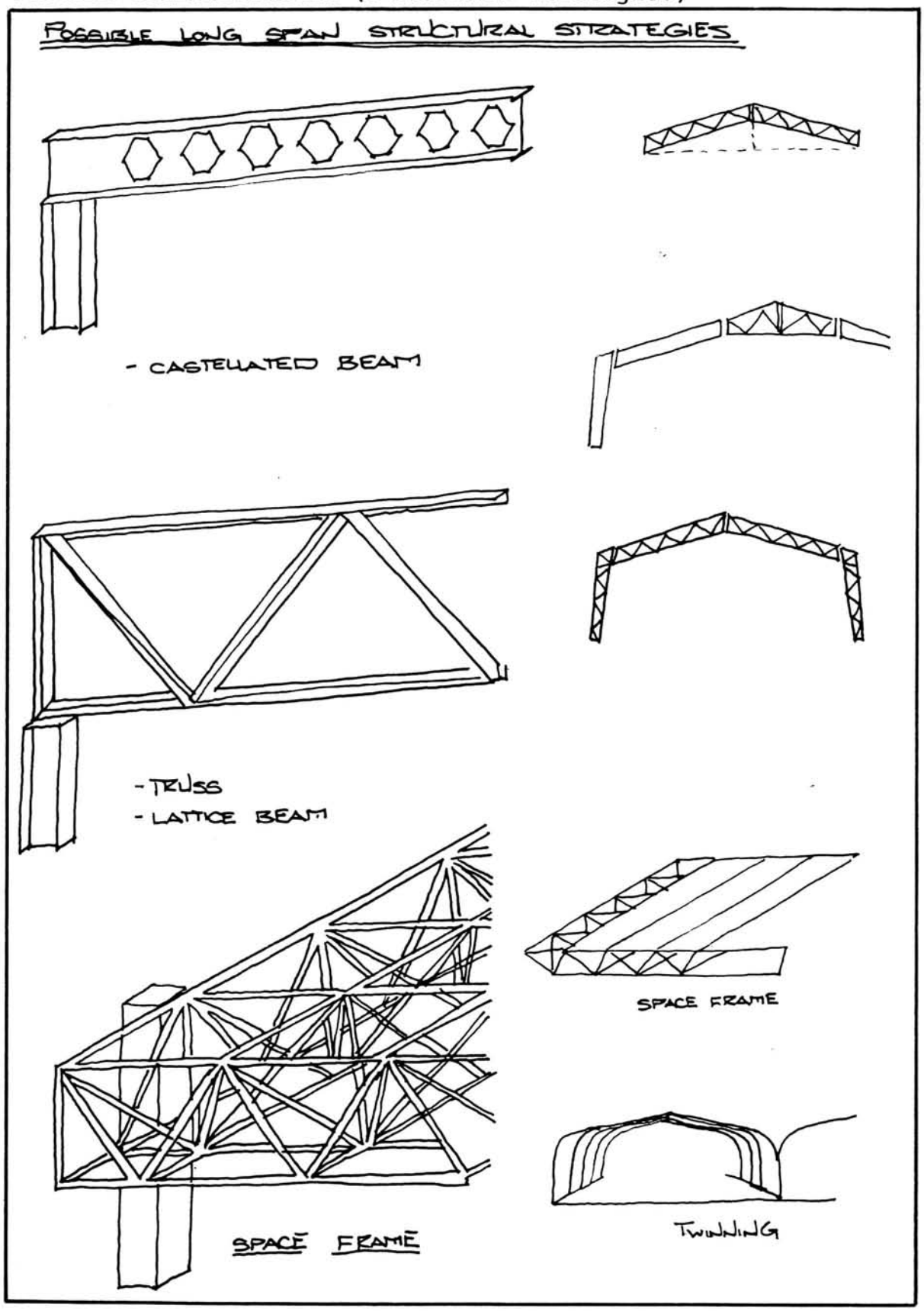
- NOTE:

THE CRITICAL DIMENSIONS FOR TENNIS COURTS CLOSELY CORRESPOND TO THOSE APPROPRIATE TO PARKING LOT DESIGN. CONSTRUCTING TENNIS COURTS ON THE TOP LEVEL OF A PARKING GARAGE MIGHT BE DESIRABLE TO GET THE MOST OUT OF SCARCE LAND RESOURCES.

PROGRAM INTERPRETATION



PROGRAM INTERPRETATION (structural strategies)



PROGRAM DEVELOPMENT

There will be an attempt to bring together all requirements and constraints of each individual facility to formulate cohesive building designs. Effort will be placed into considering the implications of all detailed data with regard to design and program and modify as required. There will be adjustment of space standards (program) as the thesis investigation progresses and situations change.

Program considerations will be made in the following areas:

LAYOUT

-Develop layout to meet site, circulation, constructional, and environmental constraints and requirements; consider:

1)Relationships to existing or proposed future buildings and outdoor facilities (practice fields) which may form parts of the sports complex.

ACCESS & CIRCULATION

-When developing location and relationship of buildings and spaces, and patterns of circulation; consider:

1)Access from outside users, including: teams, staff, vehicles, maintenance, etc...

2)Internal circulation.

3)Movement between outdoor facilities and indoor facilities.

4)Vertical circulation.

5)Access to emergency exits and egress requirements by fire and building codes.

STRUCTURE AND CLADDING

-Develop and integrate structural proposals in terms of bay spacing and large space planning requirements. When assessing structure and cladding consider:

1)Long spans over pool, gymnastics hall, tennis spaces, and other large psaces as well as their heights.

2)Condensation and corrosion protection (especially in pool).

3)Fire and safety

BUILDING SAFETY

-Investigate building and fire safety code requirements; consider:

1)Safe egress

2)Adequate circulation space

Also there will be an evaluation of the possibilities of integrated environmental factors. Consider design, construction, and space requirements, including:

VENTILATION

-Evaluate methods of ensuring adequate and flexible ventilation of spaces. Consider:

1)Natural ventilation.

2)Fresh air mechanical ventilation with no recirculation (pool, and shower spaces that contain high moisture, chemicals, etc..)

3)Mechanical ventilation with recirculation including dehumidification of air.

HEATING

-Determine adequate heating methods of various spaces.

LIGHTING

-Evaluate certain lighting conditions including:

1)Natural lighting: provide uniform illumination, avoid glare.

2)Artificial lighting requirements.

3)Lighting control (sunscreens, louvers, etc...)

PROGRAM ANALYSIS CONCLUSION

I have established a comprehensive program for the swimming facility, tennis facility, gymnastics arena, and administration building. Although,in subsequent planning and design strategies they may not all be utilized, I have attempted to develop a palette of useable programmatic elements. It may be found necessary, in later design stages, to include academically related buildings in the overall program palette to achieve the most desireable planning strategy. Yet, at this time the existing program pieces will be used in the development of the athletic park at Cornell University.

Due to the nature of the large spans found in the majority of these facilities, special structural systems will need to be utilized. In looking at collegiate and olympic athletic facility precedents (and as seen in the structural frame study), there is a multitude of long span structural strategies that can be used. It may even be found that the structural methods somehow become the cohesive image of the overall athletic park and its assemblage of sports facilities.

The program interpretations attempt to clarify certain space requirements for the facilities. What I found is that the required site areas necessary to support these facilities are very large. In the parti studies I will manipulate these footprints in an attempt to formulate a starting point for subsequent overall design interpretations and development.

In developing the program requirements I found that long span structural systems will need to be looked at so that the construction of these large spaces is a possibility. Program development is contingent on those conditions that will determine certain ways in which the projected buildings can or cannot be designed. Yet, the diversity of the spaces and building types will allow for a creative architectural expression of these facilities in terms of the cohesive assemblage of the athletic park as a whole.

G. Parti Studies

PARTI PLANNING STUDIES

Proposed new construction icludes a gymnastics gym, 50 meter swimming/diving pool facility, tennis/racquet facility and all related support spaces for the facilities and practice fields. An administration/education is also proposed along with the possibility of academic facilities along tower road. Existing facilities include, lynah rink and the new multi-purpose indoor fieldhouse. The potential of a parking structure under a portion of the practice fields is a possibility that would help to alleviate the shortage of available parking spaces.

Comparison to other ivy league institutions indicates that currently, Cornell is far behind in terms of athletic facilities. With the utilization of the new proposed facilities, the total program will place Cornell roughly on par with most of the other Ivys. The master plan for the athletic park will be purposely designed to ultimately achieve the most logical, land-efficient and design orinted strategy for Cornell Universities athletic park.

Planning assumptions

1. The following facilities at the Central campus and north campus locations are indespensible and will remain in use:

   a. Barton Hall
   b. Teagle Hall
   c. Schoellkopf Stadium
   d. Helen Newman Hall
   e. Lynah Rink
   f. Grumman Squash Courts
   g. Schoellkopf Hall
   h. Schoellkopf House
   i. Golf Course

2. The following facilities are functionally or physically deteriorated.

   a. Tennis Bubble
   b. Teagle Hall
   c. Teagle Pool

3. Intercollegiate practice will occur between 4 - 9 PM.

4. Alumni Field will remain as a location for outdoor practice.

5. The physical education enrollment and offerings are expected to remain stable. As university enrollment increases you can expect similar increases in courses for PE credit but will not significantly influence scheduling or facility demands.

6. Anticipated growth,crowded or obsolete facilities and unmet need requires creation of new facilities primarily in the following athletic programs and sports:
   a. Squash
   b. Racquetball
   c. Swimming
   d. Tennis
   e. Gymnastics

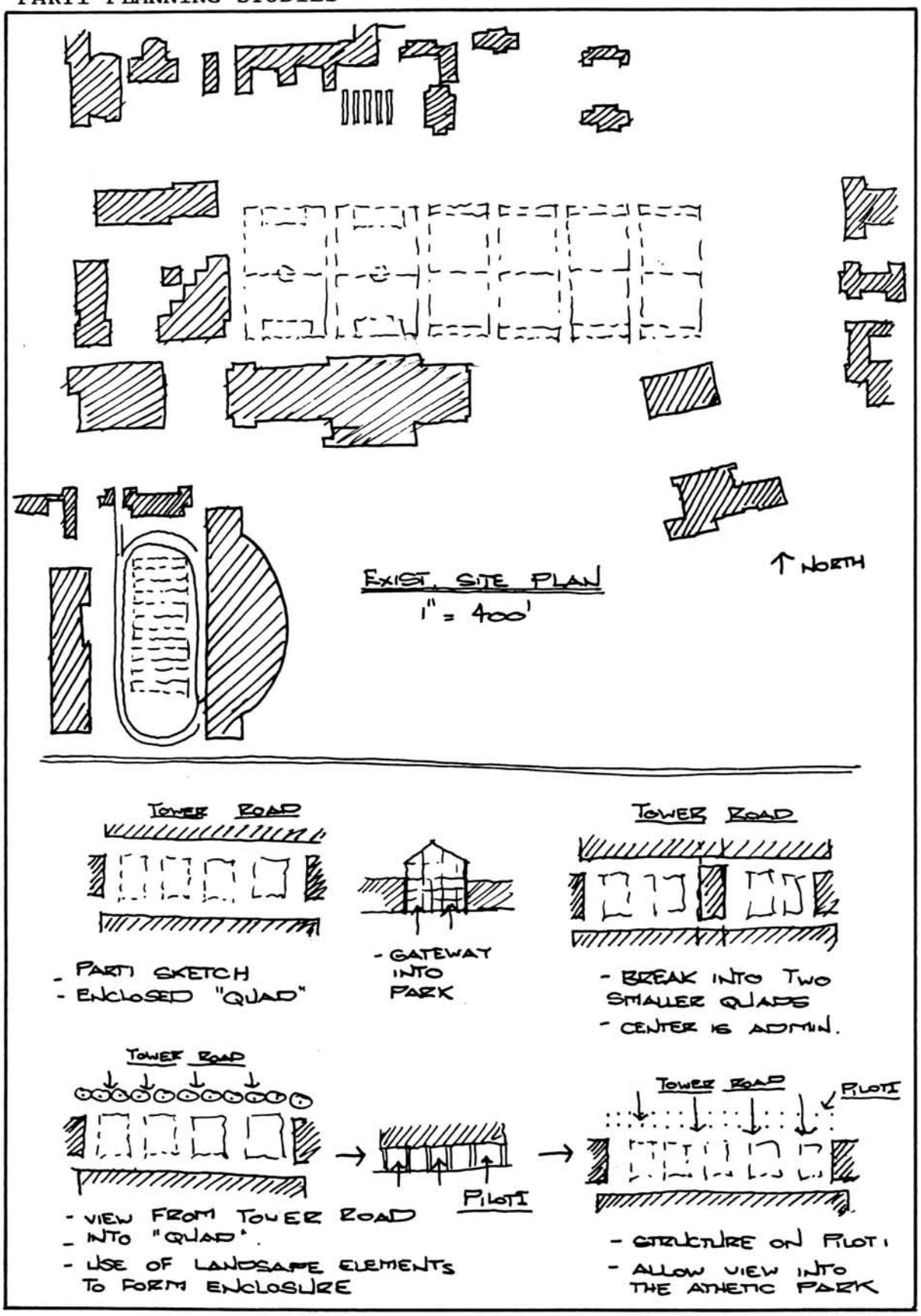
7. There are no plans to reduce the sports offered at Cornell. Increases in the number of women's intercollegiate sports may occur.

8. All facilities will be co-educational.

9. Strategically, new construction will perform in concert with existing facilities to provide the best total athletic program: recreational, intramural, physical education, intercollegiate and club sports.

10. The overall review of campus circulation and transportation will show the need of parking facilities. Further, it may necessary to consider parking structures under part of the practice fields or with the tennis facility.

PARTI PLANNING STUDIES



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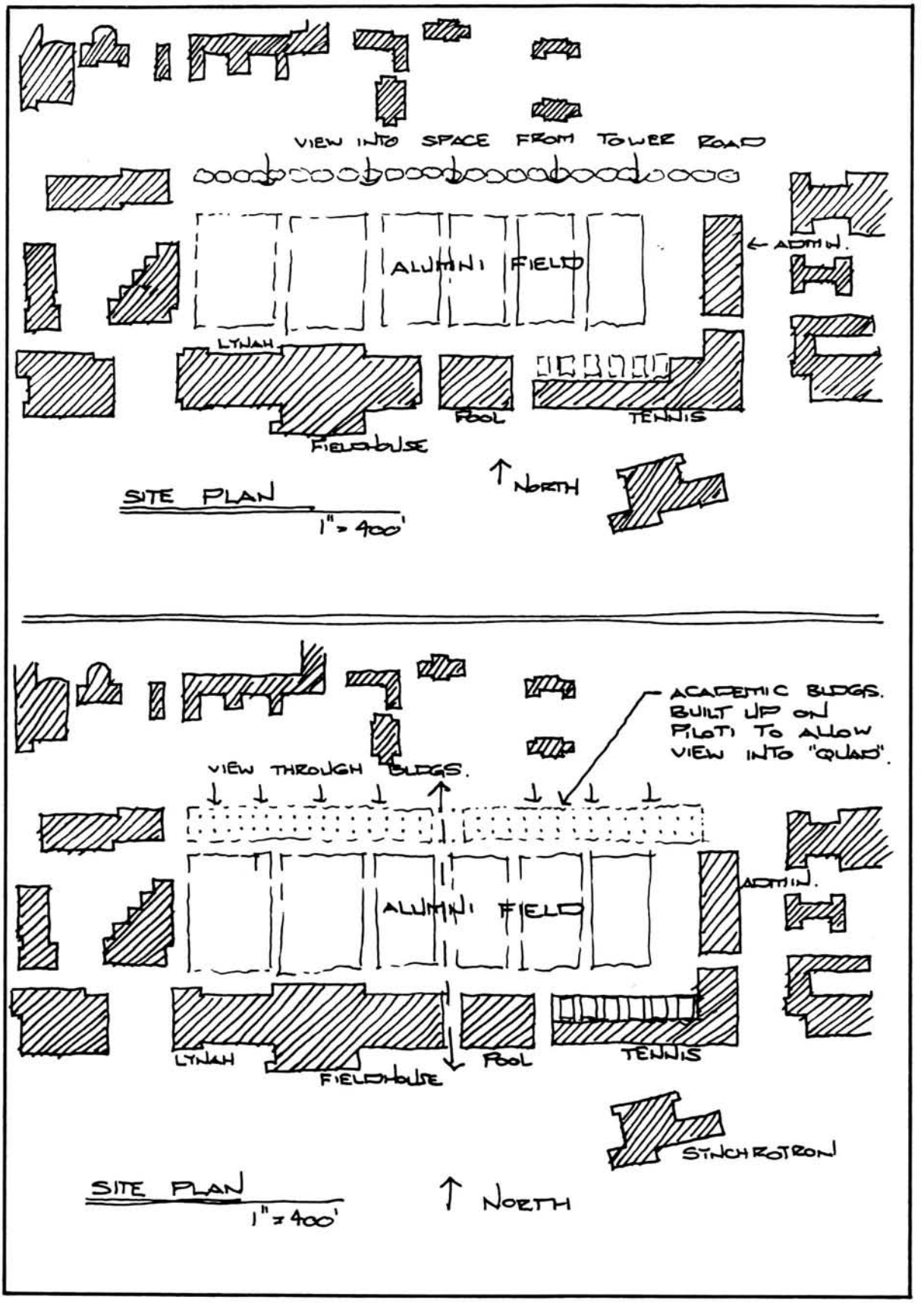

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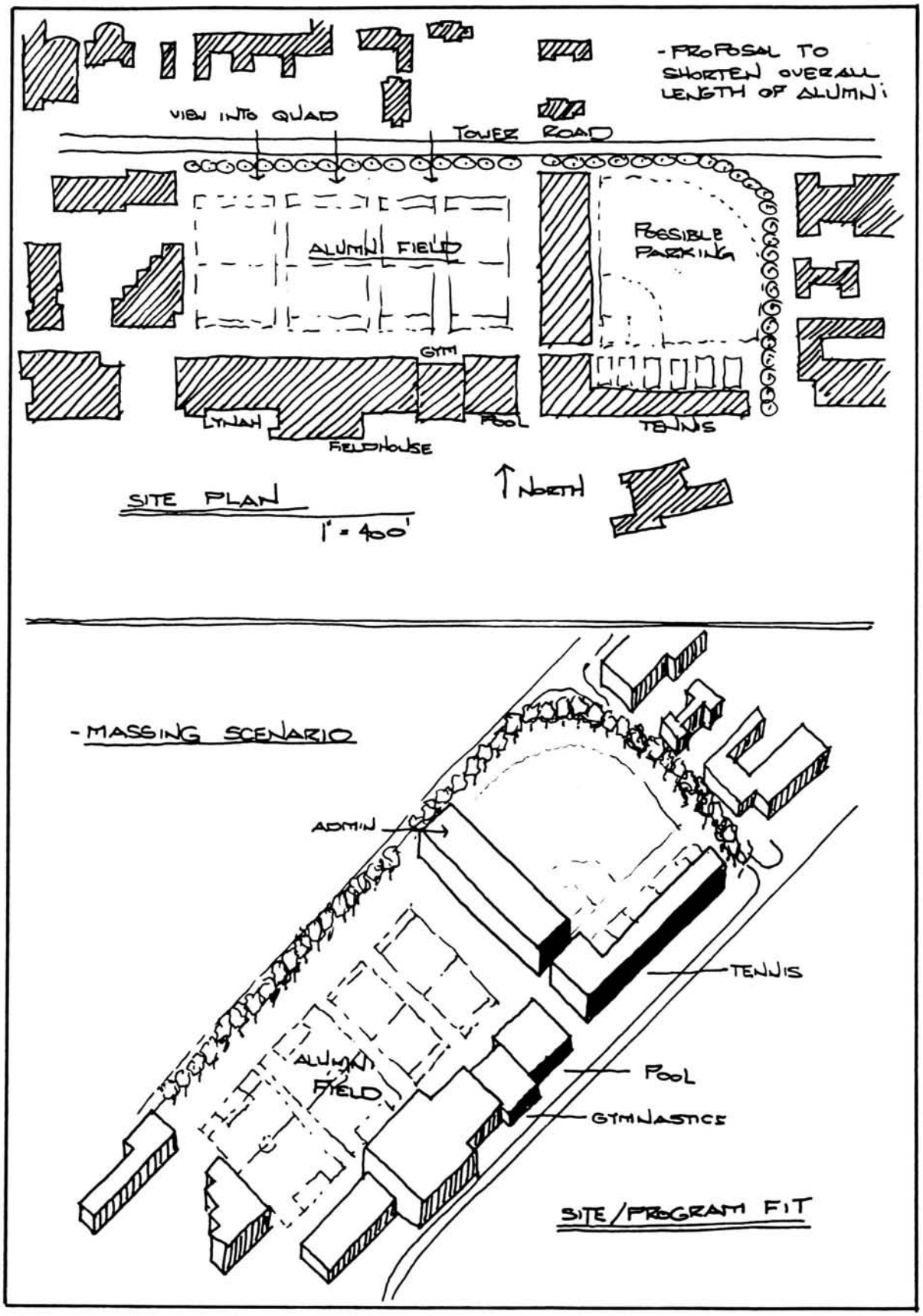

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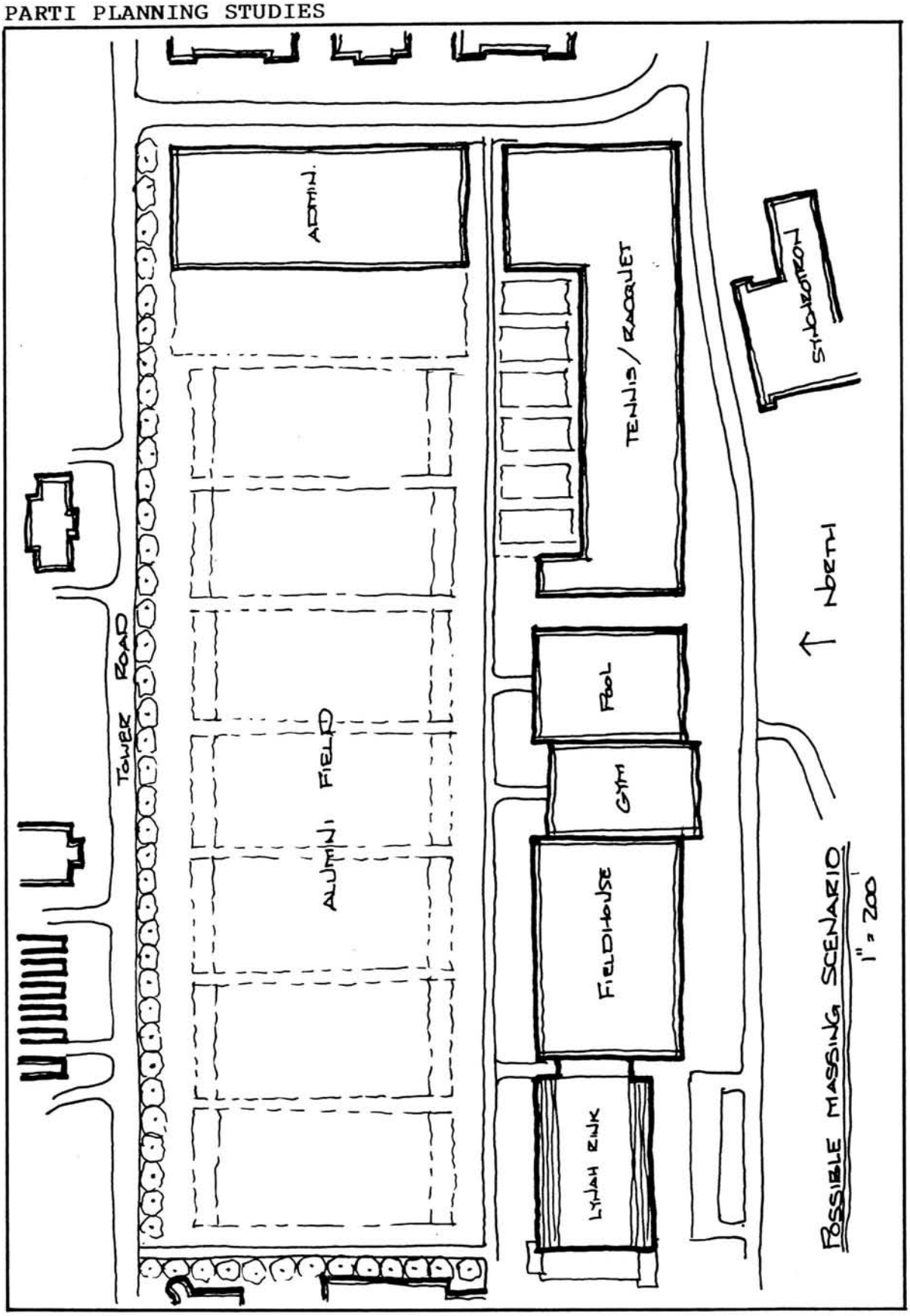

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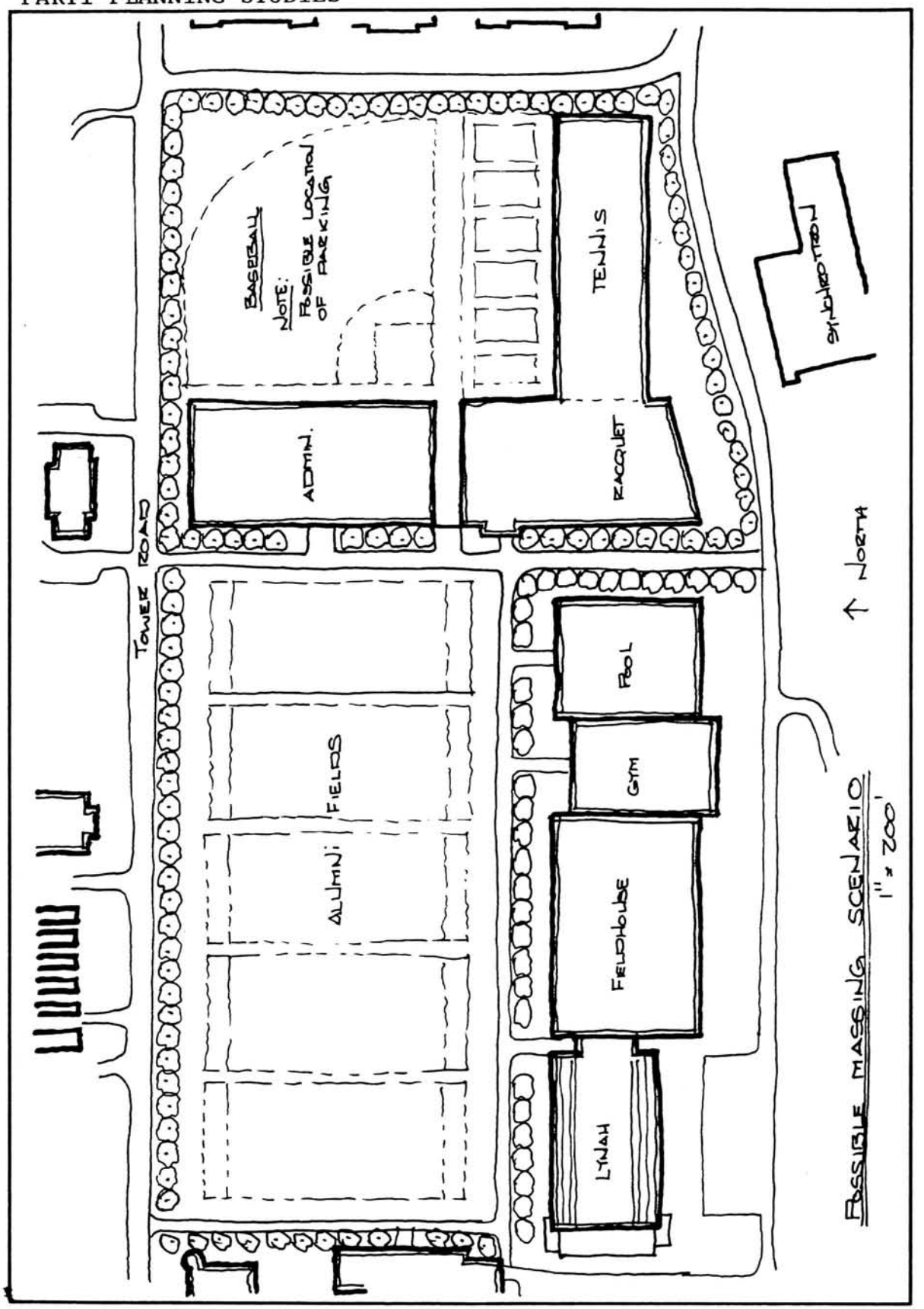
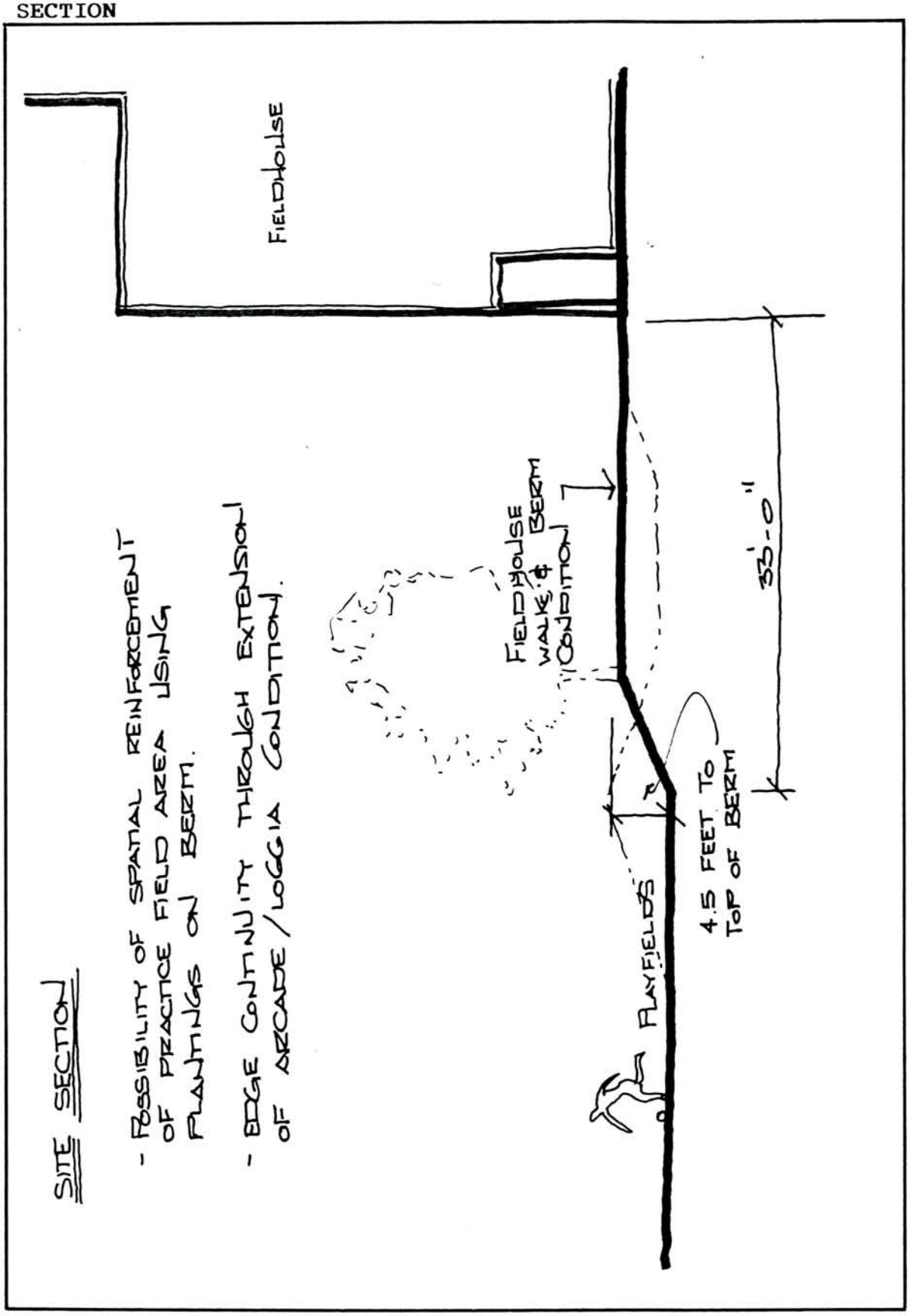


SECTION


SITE SECTION
- POSSIBILITY OF SPATIAL REINFORCEMENT OF PEACTICE FIELD AREA USING PLANTINGS ON BERM.
- EDGE CONTINUITY THROUGH EXTENSION OF ARCADE/LOGGIA CONDITION.
FIELDHOUSE
FIELDHOUSE WALK-ON BERM CONDITION
33'-0"
4.5 FEET TO TOP OF BERM
PLAYFIELDS

H. Precedent Studies

PRECEDENT STUDY

PRECEDENT PREFACE

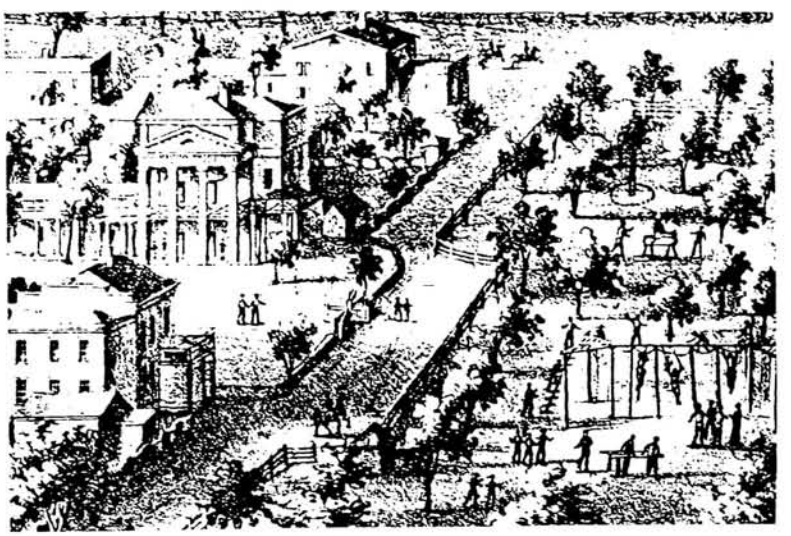
Sports, in one form or another, has been an integral part of every culture in the world. Whether competing in olympic events, collegiate events, or simply participating in physical recreation the ideals of sports is ever present in everyones lives. Sports elicit challenge, expression, personal achievement, and participation on the part of millions (professionally, collegiately,and leisurely) everyday.

By recognizing the importance of sports both competitively and leisurely through architectural precedents, it is possible to approach the subject of building sports facilities in a variety of ways. In the following pages I will study precedents of sport facilities from past and present olympics, and colleges, as well as looking at specific building types and images (pools, tennis, gymnastics facilities, etc...).

COLLEGIATE SPORTS PRECEDENTS HISTORY

Early nineteenth-century colleges made no attempt to provide facilities for sports. It wasn't until 1850 that gymnastics became popular on the american campus. The first physical education classes were held outside, as seen in the University of Virginia print. Finally, in the 1860's gymnasiums were being constructed to house physical activities.

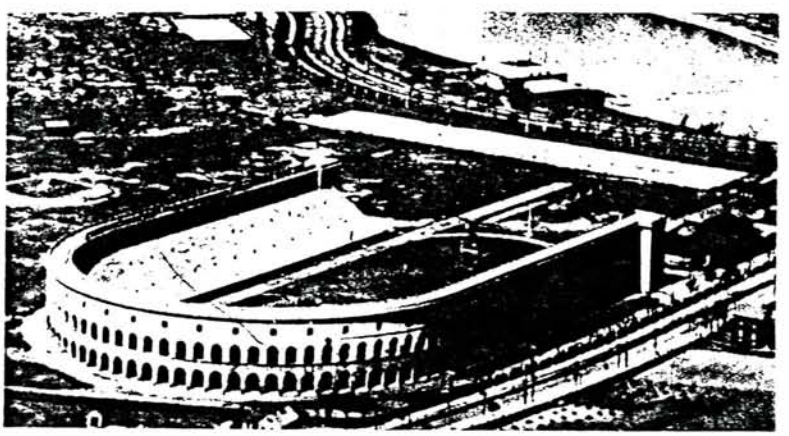
University of Virginia, Charlottesville. Detail of Sachse lithograph of 1856, showing gymnastic exercises at southern end of the Lawn.



In the early 1870's competitive sports had become more popular and intercollegiate games began. In the following decades, the land-grant schools (such as Cornell), began to use athletics and their related facilities to attract students and upgrade their prestige. Even the separate women's colleges were caught up in the sudden national interest in sports.

At the beginning of the twentieth century sports in general and college programs especially had become well organized. Large numbers of spectators had become commonplace at intercollegiate events. All of these activities required specialized facilities to house them, including: gymnasiums, tennis facilities, track and football stadia, playing fields, swimming pools, etc... The amount of land necessary for these facilities caused problems for most small schools (with little land available for expansion) as well as those campuses located in urban conditions. The state land grant institutions benefited most because of the ample amount of land that they had at their disposal for future athletic expansion.

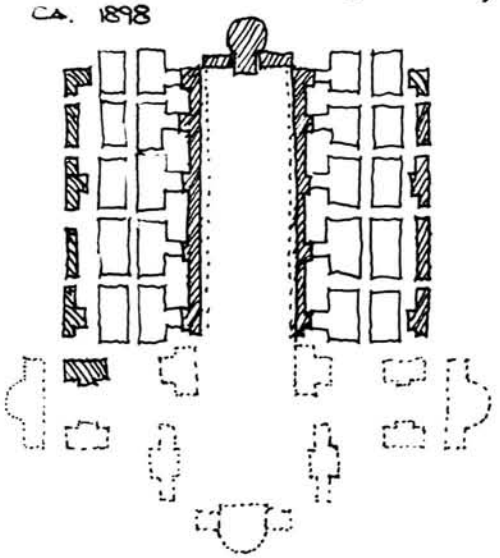
Even Le Corbusier, after visiting several american campuses in 1930, wrote a book about america with a chapter on colleges titled "Everyone an Athlete." In the chapter Le Corbusier not only notes the interest of organized sports on college campuses but also the park-like nature of the campus. He saw a clearly defined athletic complex in america the reinforced the Utopian ideas of a perfect physical environment.



Harvard Stadium, across Charles River from Harvard College. Designed by Charles F. McKim of the firm of McKim, Mead & White, and constructed 1899–1903, this was one of the largest structures in reinforced concrete at time of its completion.

CAMPUS PRECEDENTS

PLAN OF U.V.A. SHOWING ADDITIONS PROPOSED (M,M ¢W)
CA. 1898



QUAD PLANNING PRECEDENT

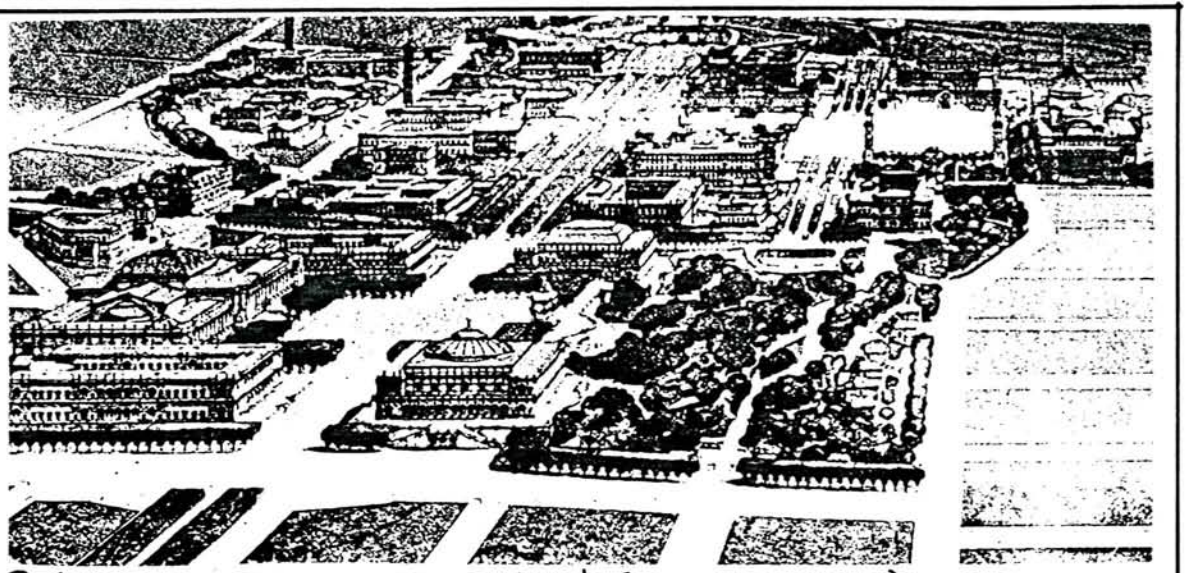
- ENCLOSURE BY BUILDINGS USED AS EDGE MAKERS
- USE OF ARCADE TO FORM UNIFORM EDGE.
- STRONG SPATIAL READING
- CREATION OF "ACADEMICAL VILLAGE"
- DIALOGUE BETWEEN BLDGS AND OVERALL SPACE

PHYSICAL ACTIVITY IDEALS

- INITIALLY THOMAS JEFFERSON SUGGESTED THAT THE ARCADED PASSAGEWAYS BE USED BY STUDENTS FOR EXERCISE IN BAD WEATHER.
- PREVIOUS PRINT SHOWED THE USE OF SOUTH LAWN AS AREA FOR GYMNASTIC EXERCISES

UNIVERSITY OF VIRGINIA (ENGRAVING 1827)

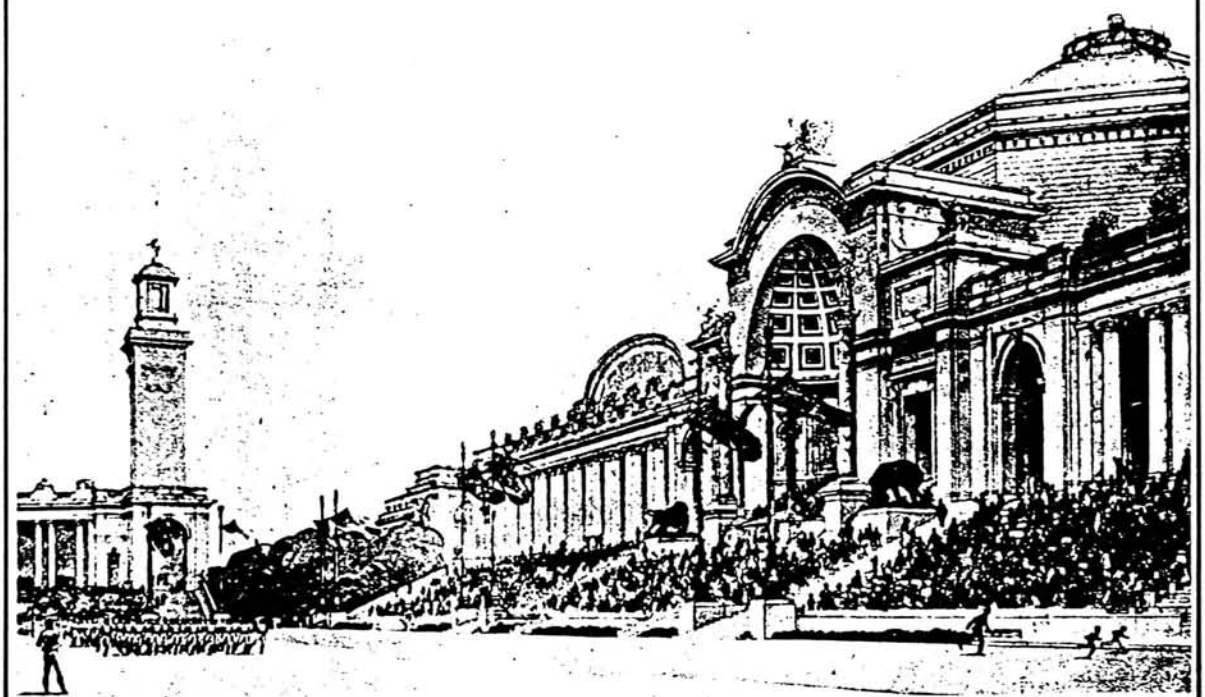
CAMPUS PRECEDENTS



RENDERING OF FIRST PRIZE DESIGN (U. OF C. BERKELEY) EMILE BENARD

CAMPUS PRECEDENT

- BEAUX-ARTS URBAN PLAN
- "QUADS" DEVOTED TO ACADEMIC DISCIPLINES
- NOTE: PRINCIPAL ENTRANCE TO UNIVERSITY WOULD LEAD TO "THE COLLEGE SQUARE" BY WAY OF UNIVERSITY GYMNASIUM.
- THE GYMNASIUM AND ADJACENT STADIUM WERE SEEN AS POTENTIAL SETTINGS FOR ACADEMIC FESTIVITIES.



VIEW OF STADIUM (UNIV. OF CAL., BERKELEY)

CAMPUS PRECEDENTS

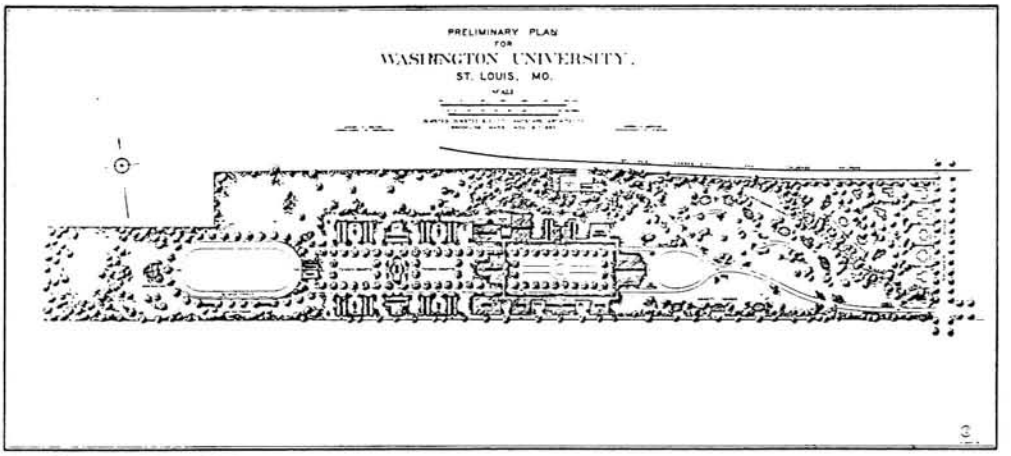
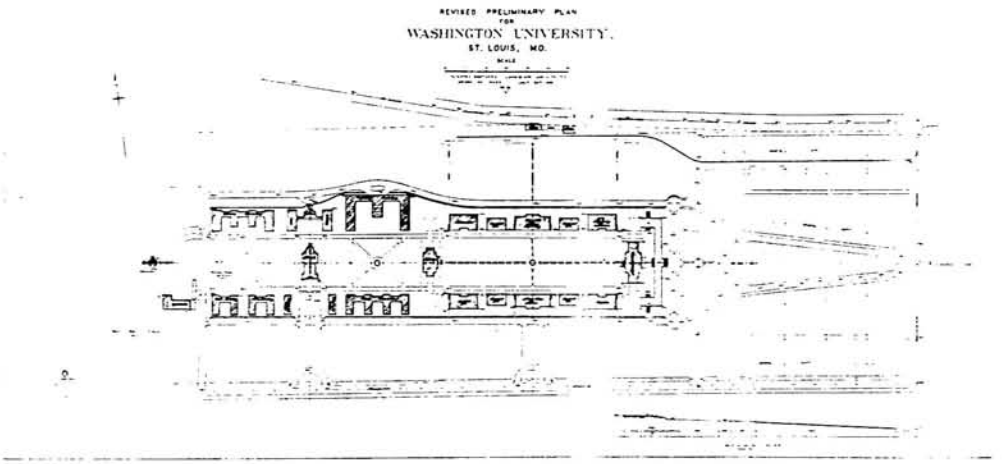


Fig. 8. Preliminary Plan for Washington University, November 1895. (Courtesy of Olmsted Associates, Inc., Brookline, Massachusetts)

Fig. 9. Revised Preliminary Plan for Washington University, July 1899. (Courtesy of Olmsted Associates, Inc., Brookline, Massachusetts)

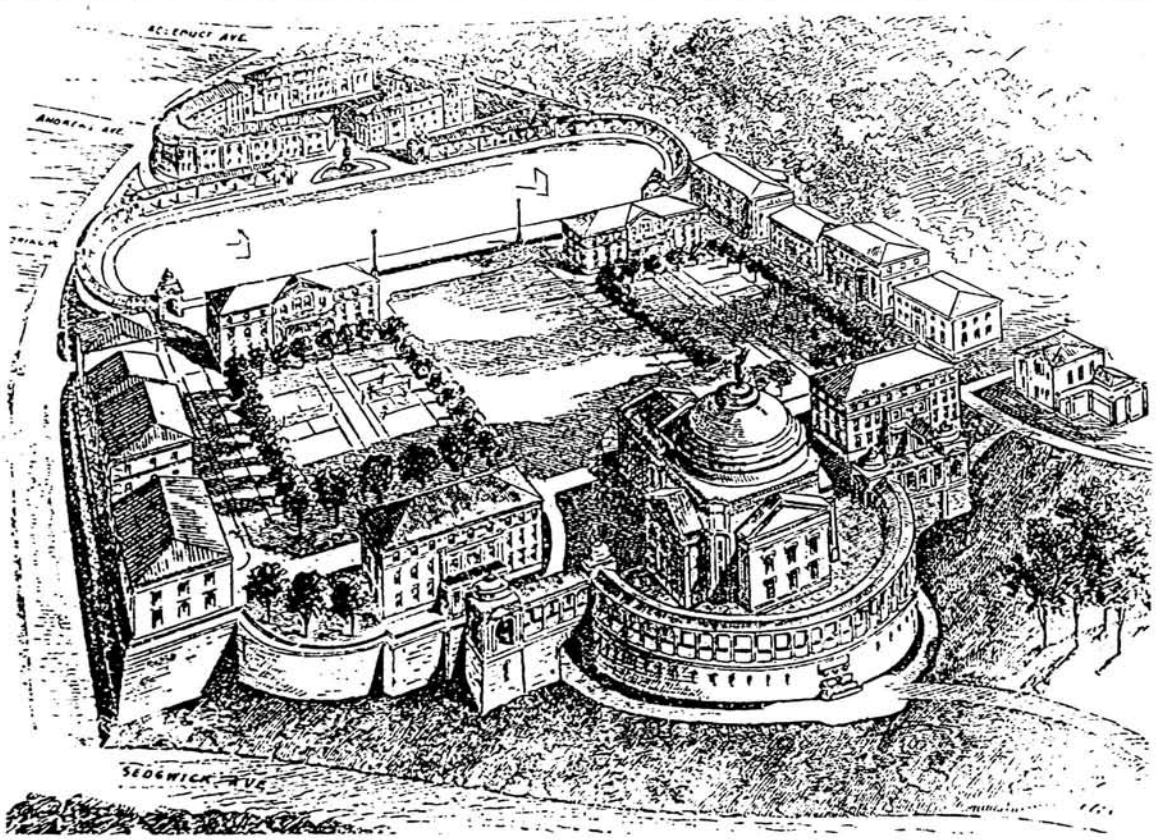


PRELIMINARY PLANS FOR WASHINGTON UNIVERSITY

ATHLETIC "QUAD" PRECEDENT

- INITIALLY WE SEE TRACK AND ASSOCIATED FIELDHOUSE AS TERMINATORS OF CAMPUS AXIS.
- ENCLOSURE IS ACCOMPLISHED BY TREES AROUND PERIMETER OF SPORTS ARENA.
- IN THE 1899 (LOWER) PLAN WE SEE ADDITION OF BLDGS. TO ENCLOSE AND DEFINE ATHLETIC PLAY AREA.
- FIELDHOUSE AND TRACK IS STILL THE END OF AXIS BUT IS NOW DEFINED AS ITS OWN "QUAD" OR ATHLETIC PARK ENCLOSED BY RELATED SPORTS FACILITIES AND BUILDINGS.

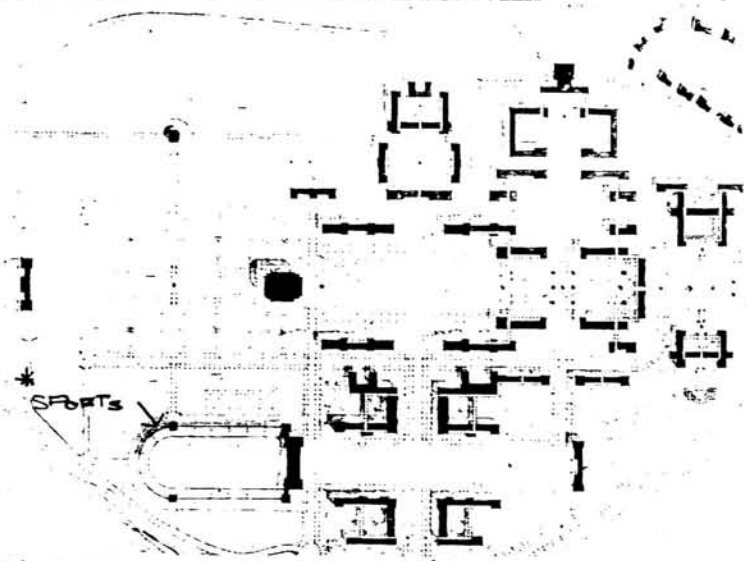
CAMPUS PRECEDENTS



NEW YORK UNIVERSITY (RENDERING) - STANFORD WHITE

SPORTS IDEALS

- SEMICIRCULAR COLONNADE HOUSES HALL OF FAME AND ENCLOSES PRACTICE FIELD.
- ENCLOSED QUAD AREAS HOUSE EXTERIOR TENNIS COURTS AND PRACTICE LAWNS.

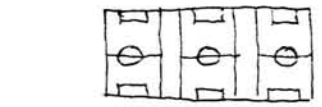


MASTER PLAN FOR RICE INSTITUTE

RICE UNIVERSITY

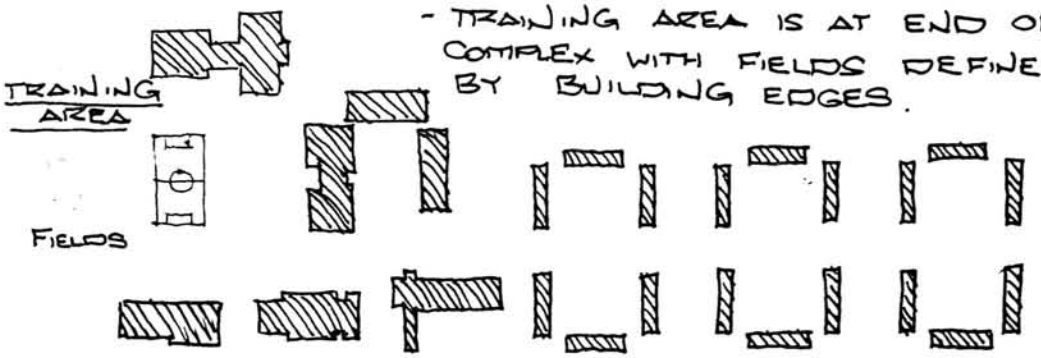
- STADIUM & FIELDHOUSE ENDS "QUAD".
- USE OF EXTENSIVE LOGGIA AND ARCADE SYSTEMS TO FORM UNIFORM EDGES AND SPACES.

OLYMPIC PRECEDENTS (pool)

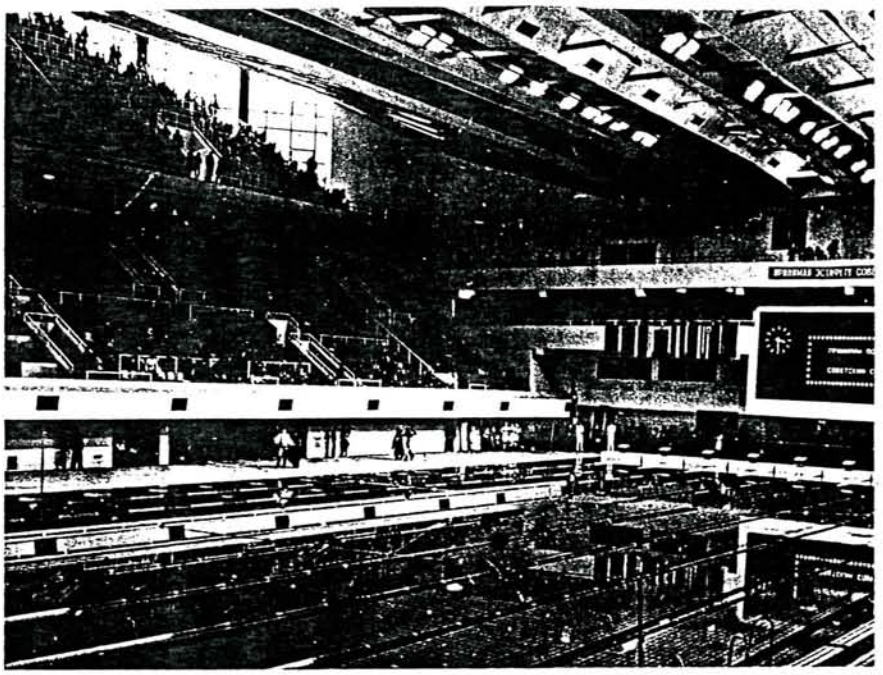


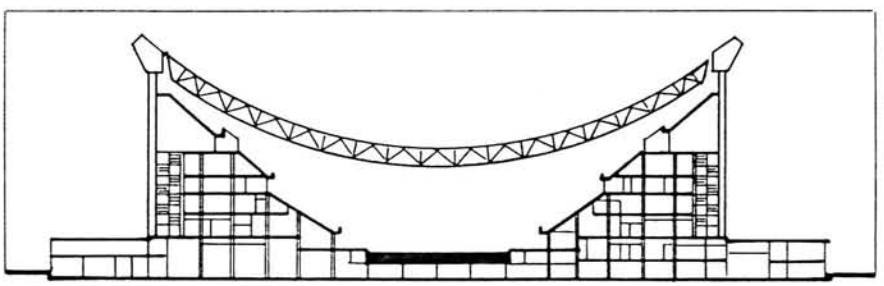
- INDIVIDUAL BUILDINGS FORM QUAD SPACES WITHIN COMPLEX

- TRAINING AREA IS AT END OF COMPLEX WITH FIELDS DEFINED BY BUILDING EDGES.



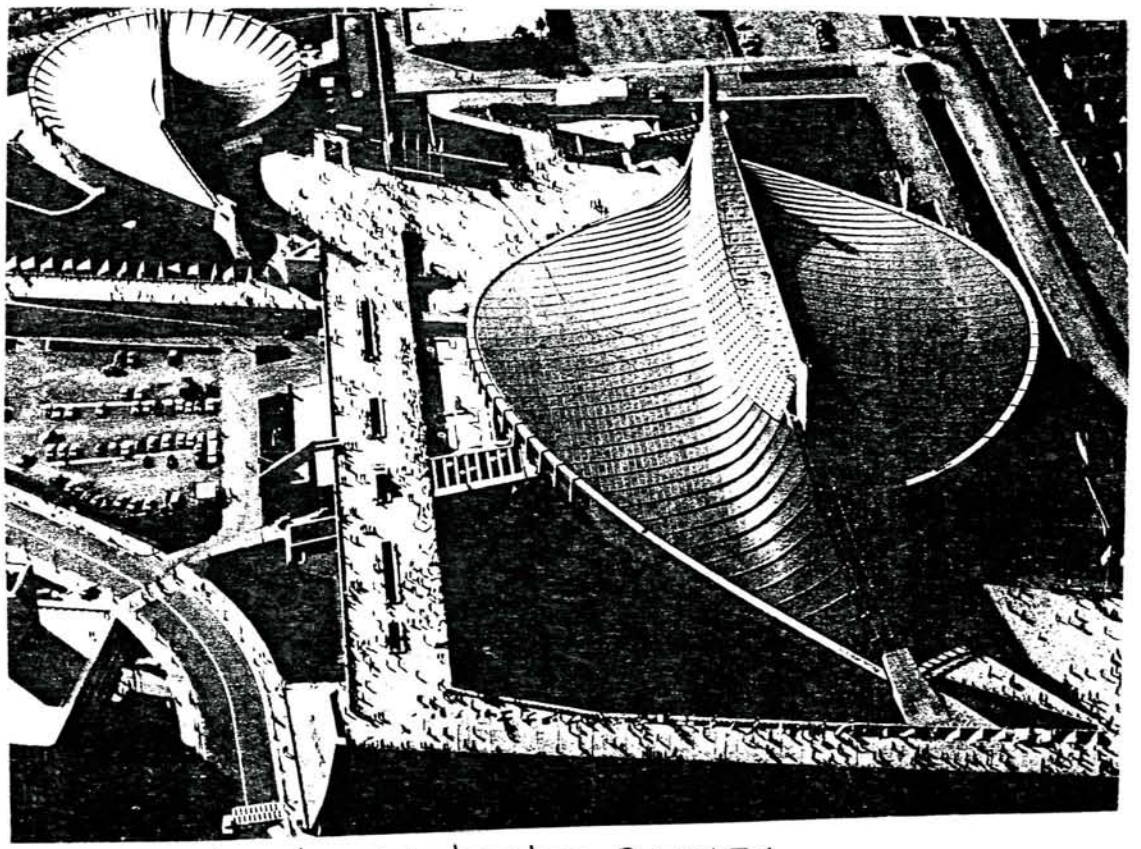
OLYMPIC VILLAGE (MOSCOW, 1980)





SWIMMING FACILITY (MOSCOW)
- FRAMED BY 2- DOUBLE HINGED ARCHES (SPAN 370')

OLYMPIC PRECEDENTS

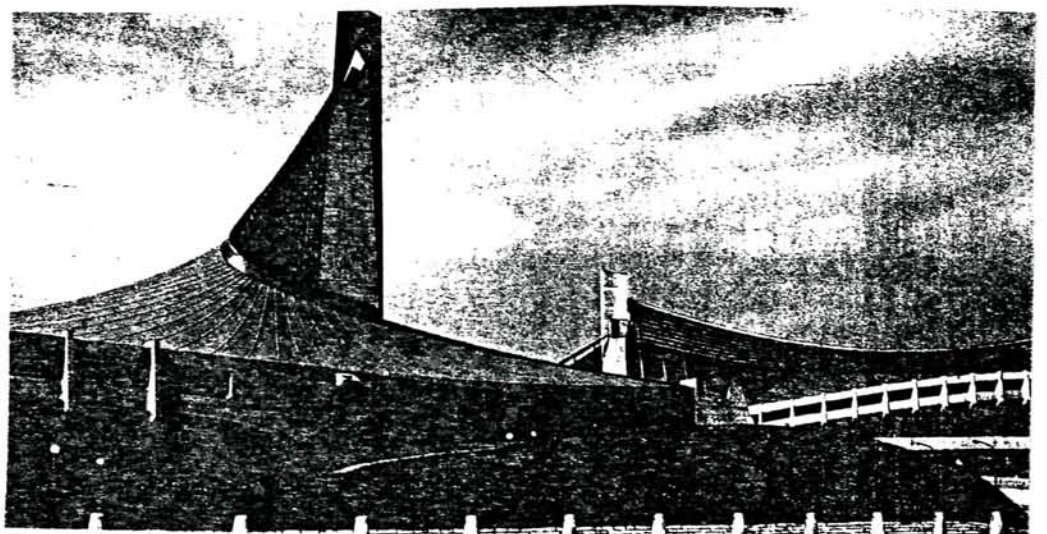


VIEW OF NATIONAL GYMNASIUMS COMPLEX

GYMNASIUM COMPLEX 1964 OLYMPICS (TOKYO)

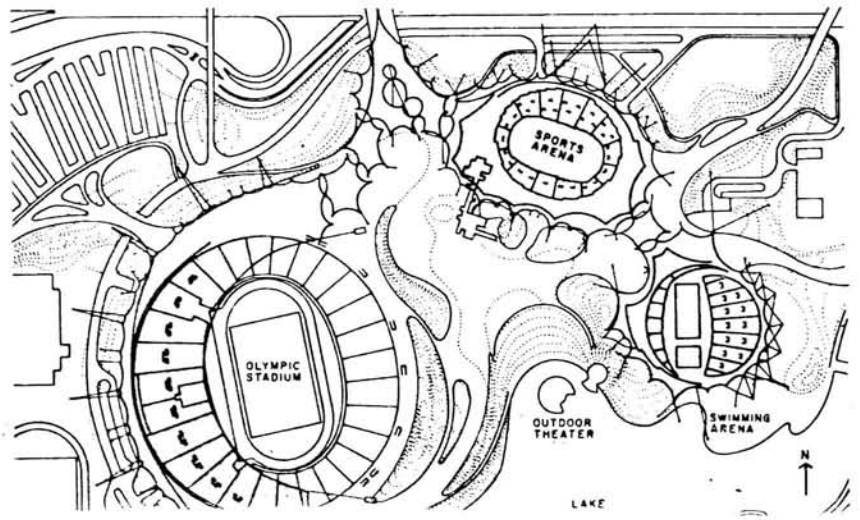
- MAIN GYMNASIUM & SMALLER GYMNASIUM DESIGNED BY KENZO TANGE

- CONNECTING MULTILEVEL PEDESTRIAN DECK



SMALL GYMNASIUM (LEFT) W/ MAIN GYMNASIUM (RIGHT)

OLYMPIC PRECEDENTS

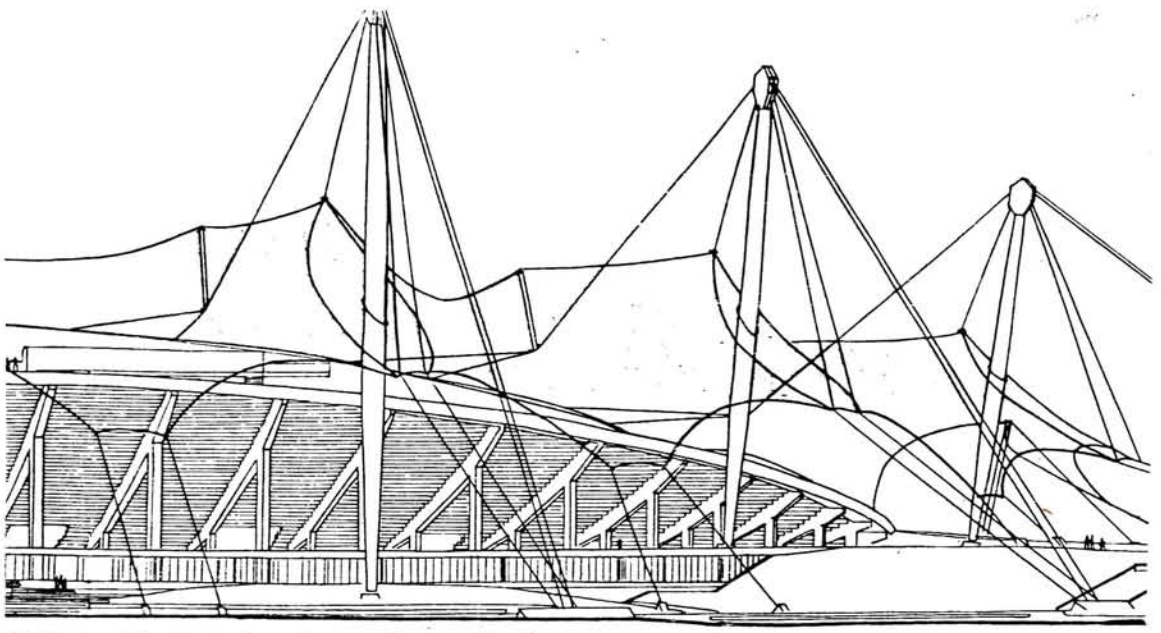


SITE PLAN

DETAIL

XX OLYMPIC GAMES, MUNICH 1972

- DESIGN BY BEHNISCH & PARTNER
- INTEGRATION OF ATHLETIC FACILITIES INTO A SCULPTURED LANDSCAPE.
- UNITY IS ACHIEVED W/ A TENT ROOF (FREI OTTO)
- TENT ROOF CREATES ATMOSPHERE OF OPENNESS, LIGHTNESS, AND TRANSPARENCY.
- PRESTRESSED CABLE NET CONSTRUCTION WITH TRANSPARENT ACRYLIC INFILL.



VIEW OF STRUCTURAL "TENT"

OLYMPIC PRECEDENTS

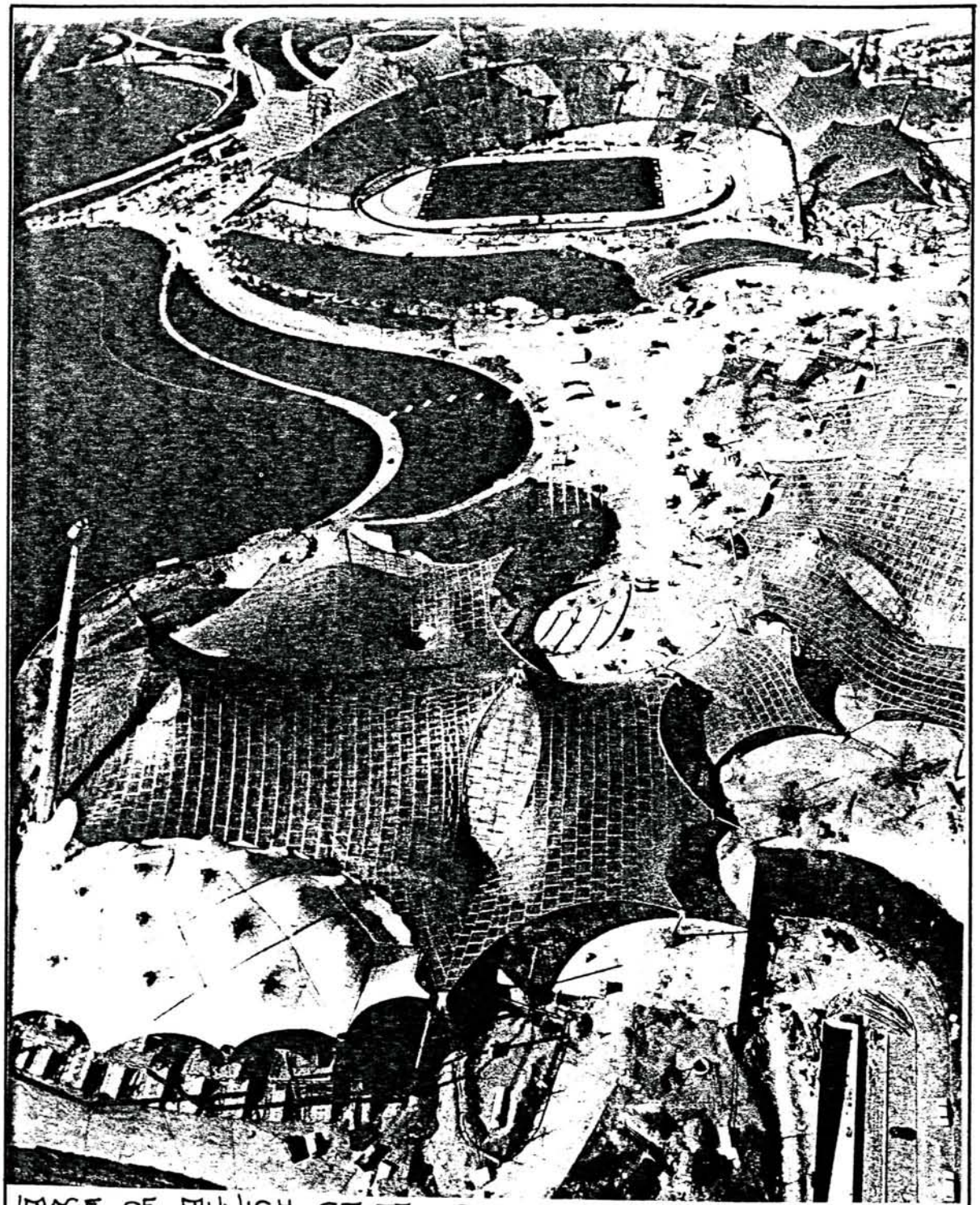
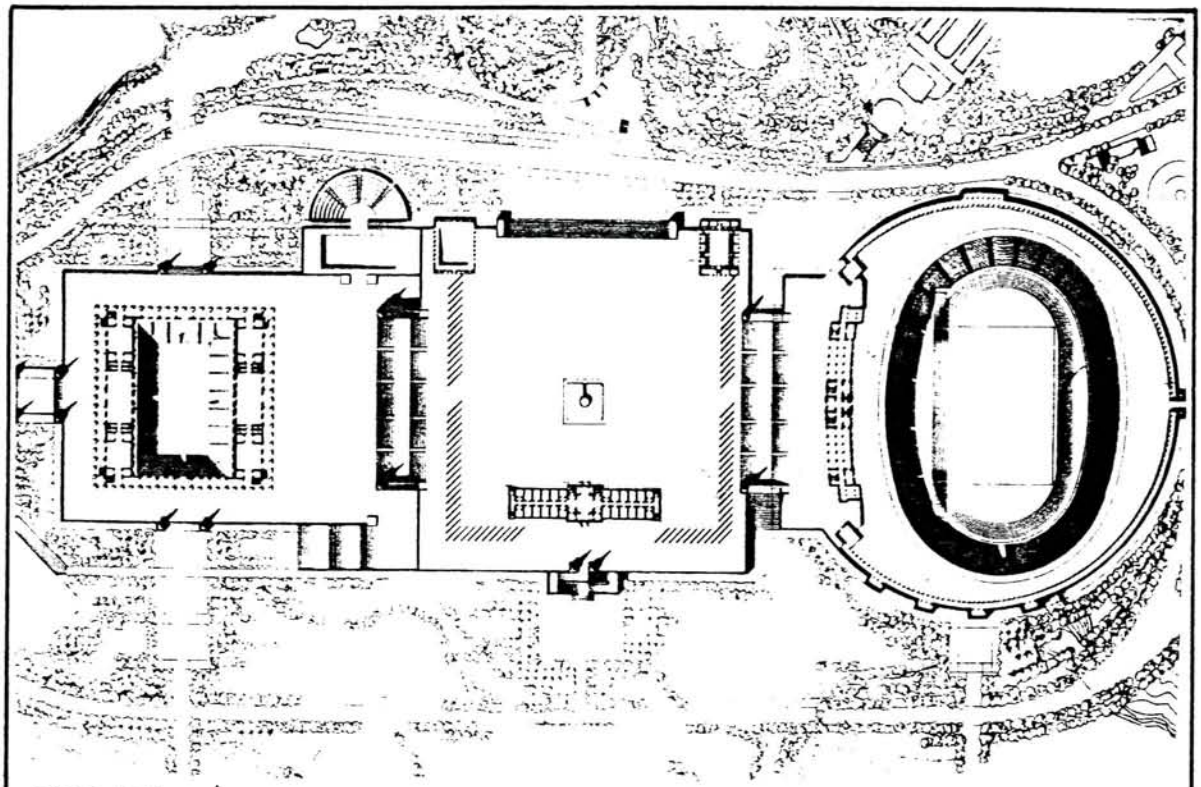


IMAGE OF MUNICH SPORTS COMPLEX (1972)

- STADIUM, SPORTS ARENA AND SWIMMING ARENA ARE DEPRESSED INTO THE GROUND.
- IDEAL OF SCULPTURED LANDSCAPE
- INTEGRATION THROUGH COMMON TENT FORM.

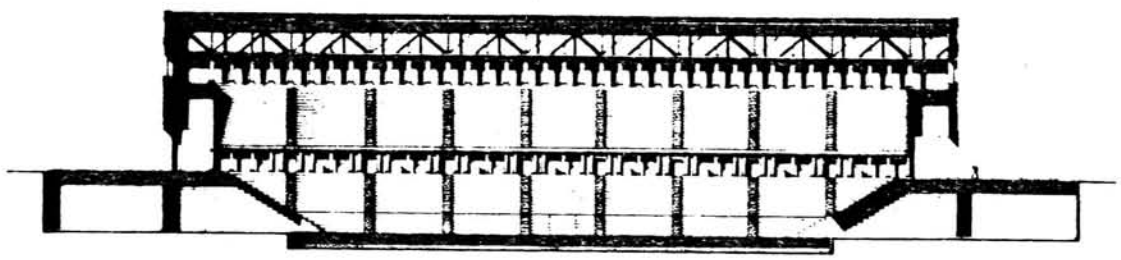
OLYMPIC PRECEDENTS



SITE PLAN

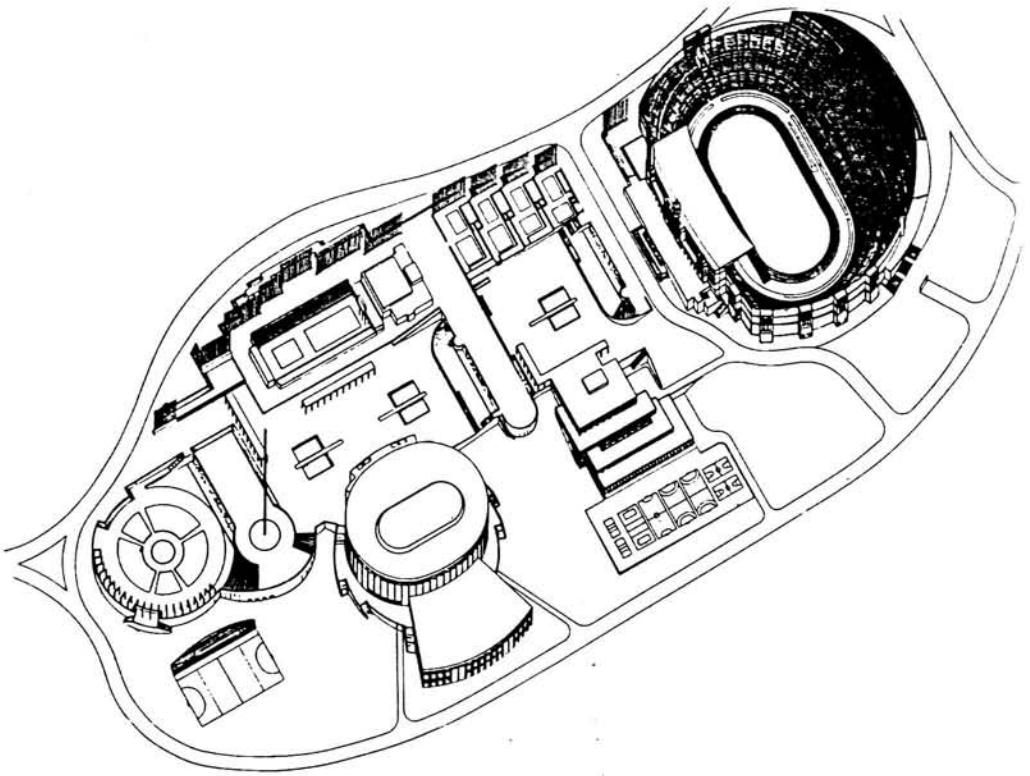
OLYMPIC RING PROJECT PROPOSAL (BARCELONA)
(RICARDO BOFILL)

- SPORTS COMPLEX DESIGNED AS AN URBAN PALACE.
- IDEA OF RAISED PLATFORM
- SPORTS "AGORA" FOR TRAINING OF ATHLETES
- AN OPEN "GREEN AREA" AS A SYSTEM OF SPATIAL ORGANIZATION AND ATHLETIC PRACTICE.



SECTION THROUGH GYMNASIUM

OLYMPIC PRECEDENTS

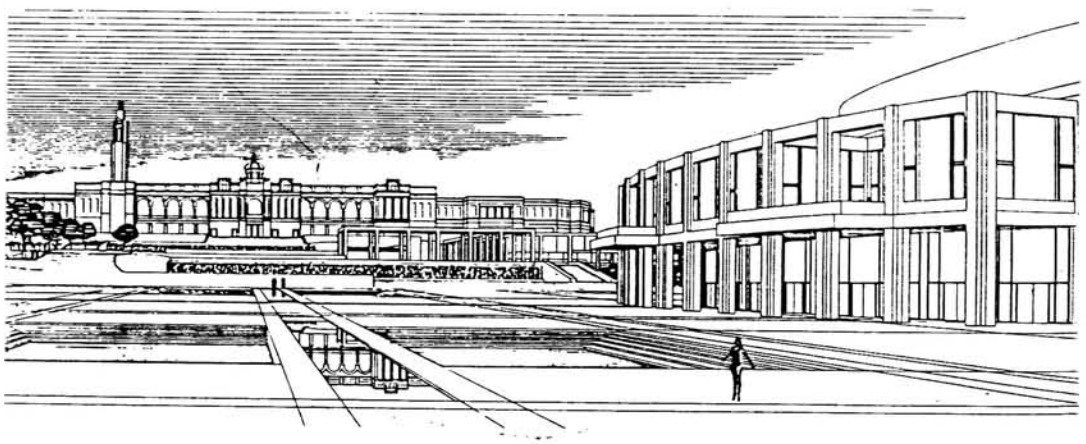


AXON OF SPORTS COMPLEX

OLYMPIC RING PROJECT PROPOSAL (BARCELONA)

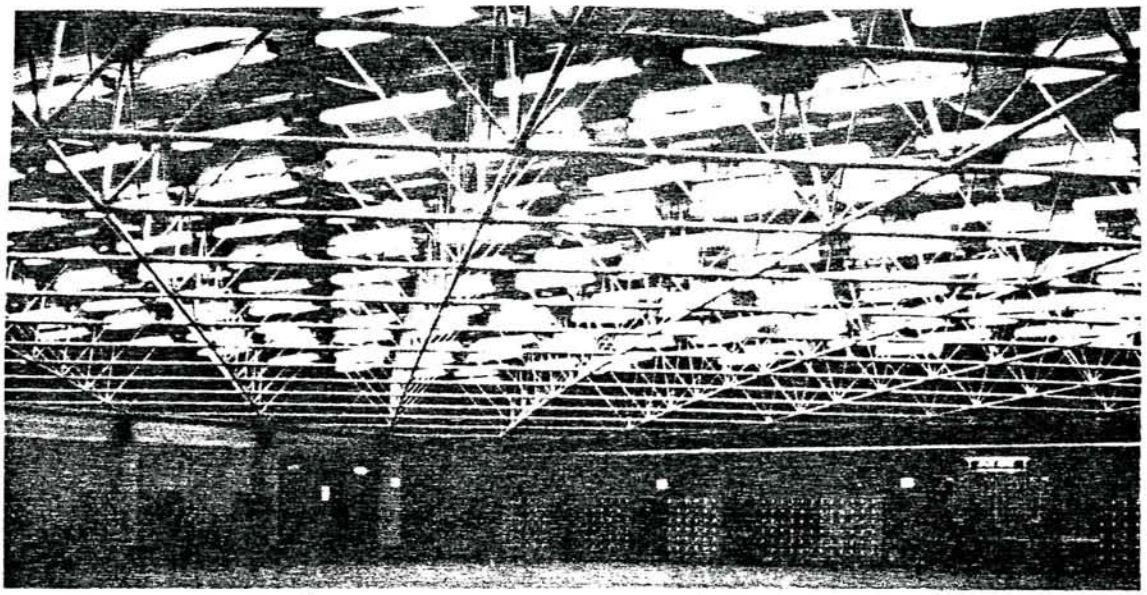
(FREDERICO CORREA)

- CONTINUOUS SPORTS COMPLEX COMPRISED OF INWARDLY ORIENTED ARRANGEMENT OF FACILITIES.

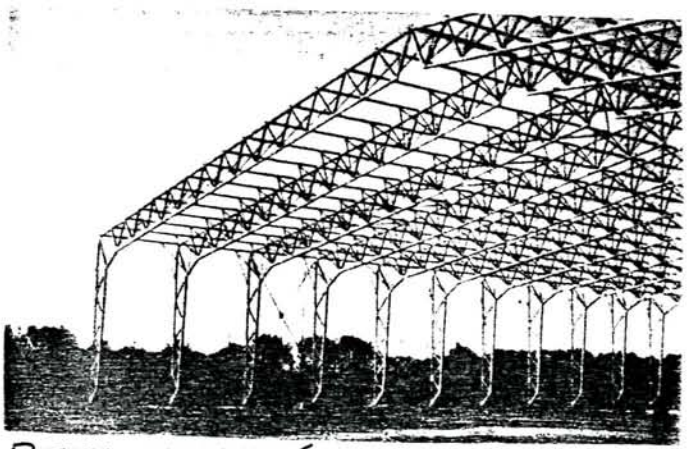


PERSPECTIVE LOOKING AT STADIUM

STRUCTURAL PRECEDENTS

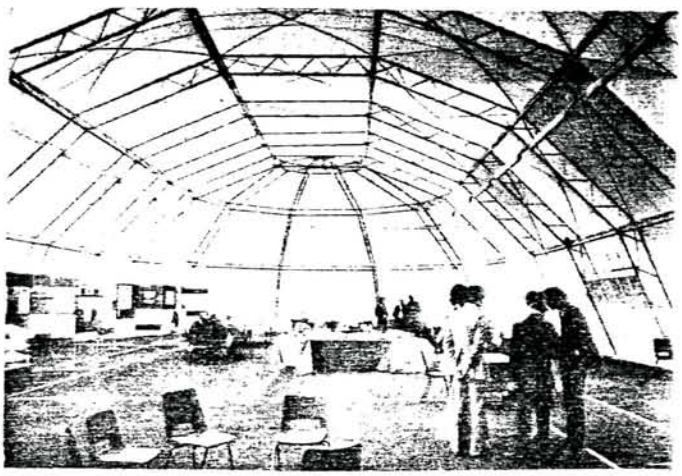


SPACE FRAME (MULTI-PURPOSE SPACE)



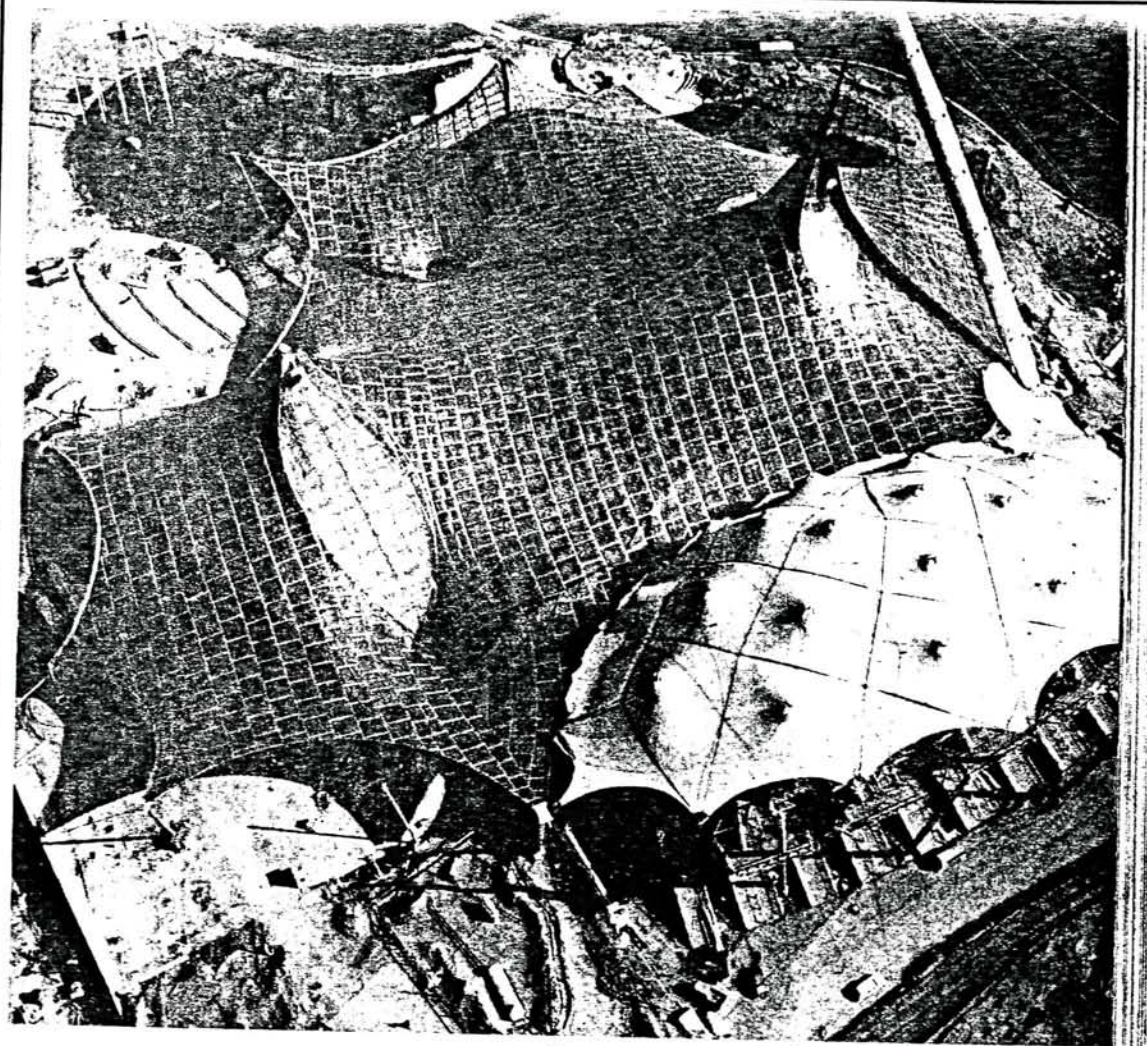
PORTAL FRAME (BASKETBALL ARENA)

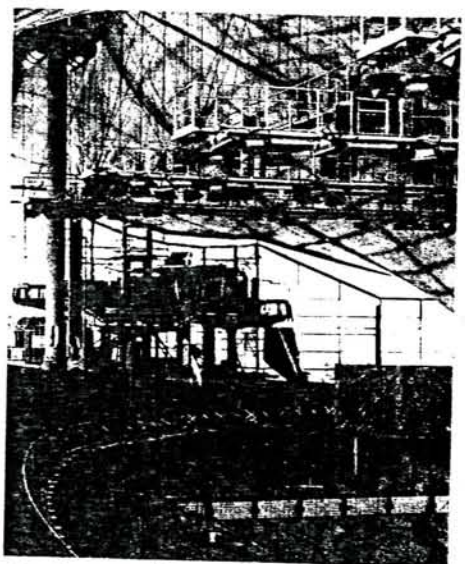
TENSILE STRUCTURE (MUNICH, 1972)

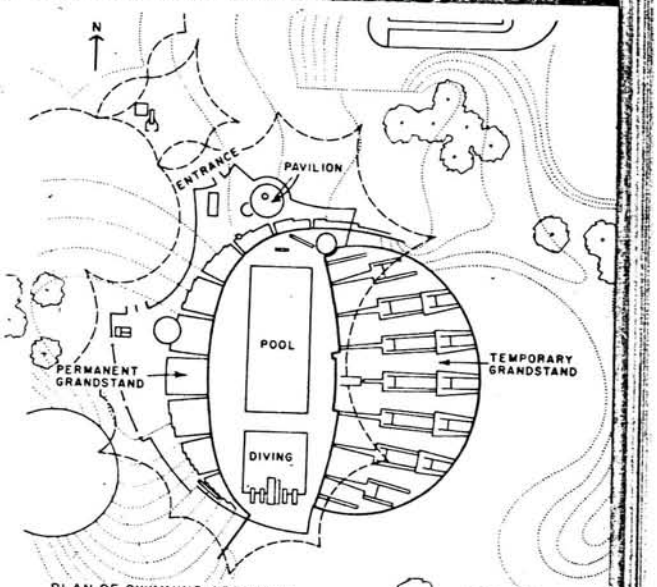


LATTICE FRAME (TENNIS FACILITY)

PROGRAM PRECEDENTS (sport complex and pool)



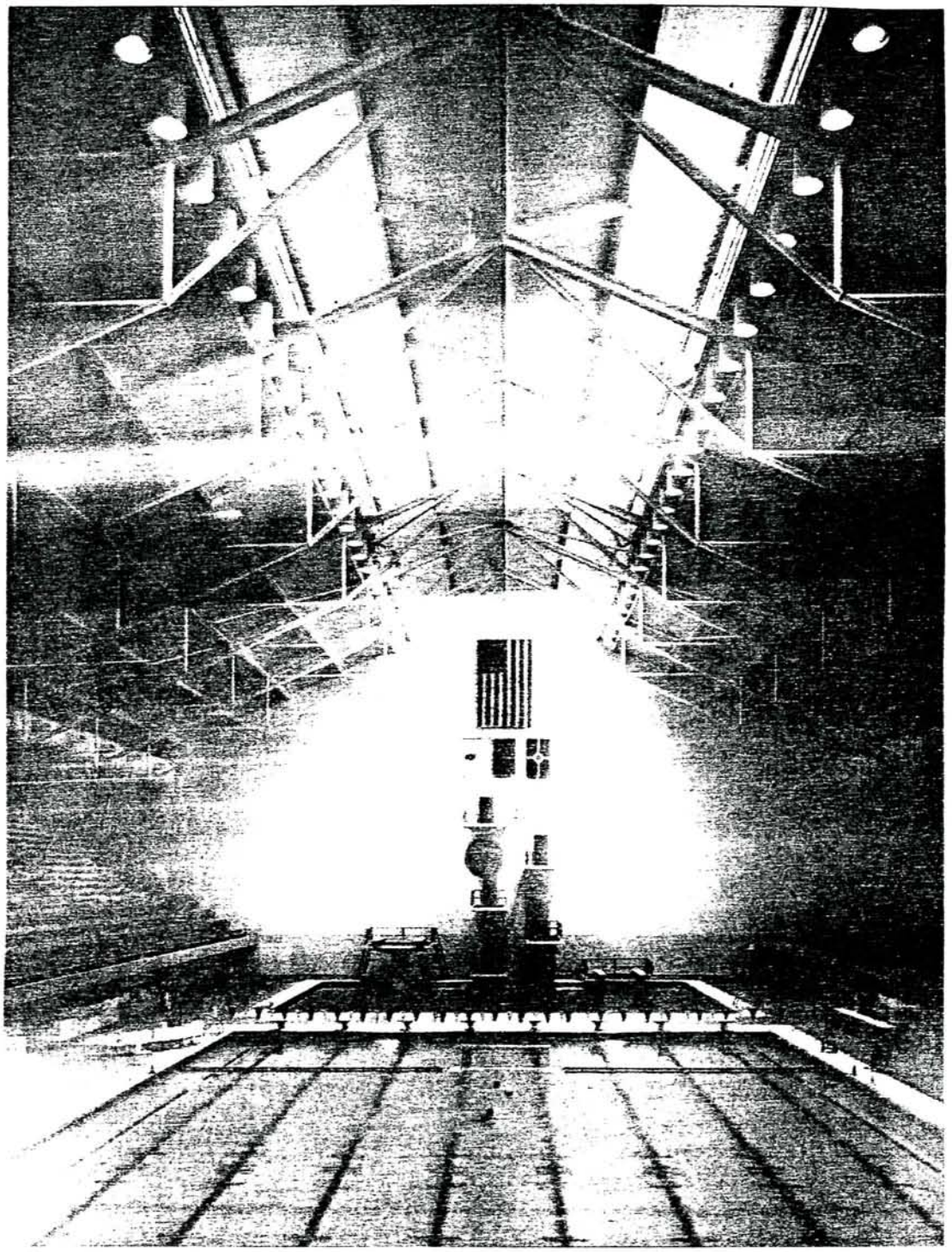




PLAN OF SWIMMING ARENA

SWIMMING ARENA (MUNICH, 1972) - BEHNISCH & PARTNER

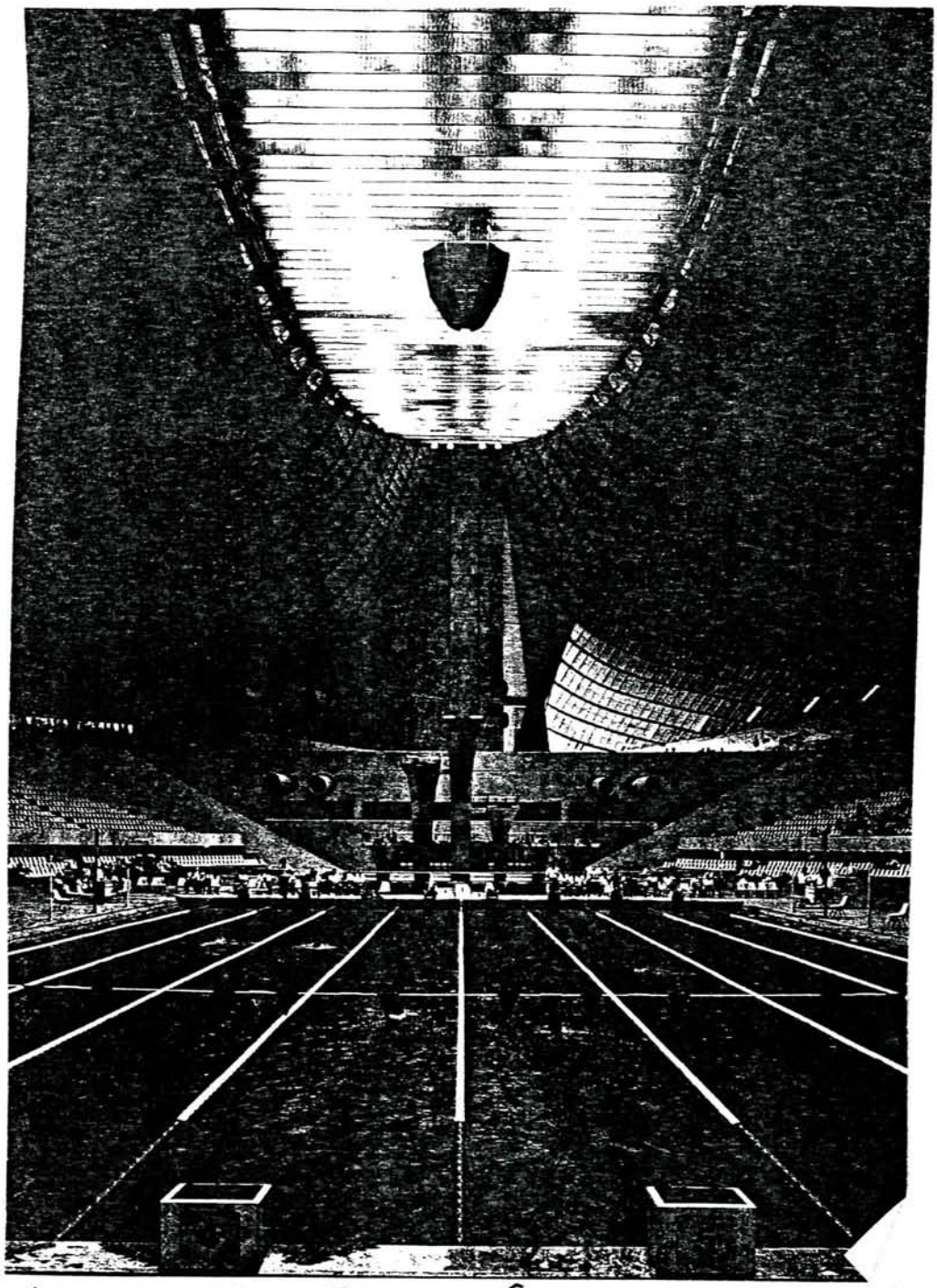
PROGRAM PRECEDENTS (images)



INTERIOR OF INDIANA UNIVERSITY NATATORIUM
(EDWARD LARRABEE BARNES, ASSOCIATES)

- THREE HINGED TRUSS
- THRUST OF TRUSS IS TAKEN TO OUTSIDE AND INTO THE GROUND BY SERIES OF BUTTRESSES.

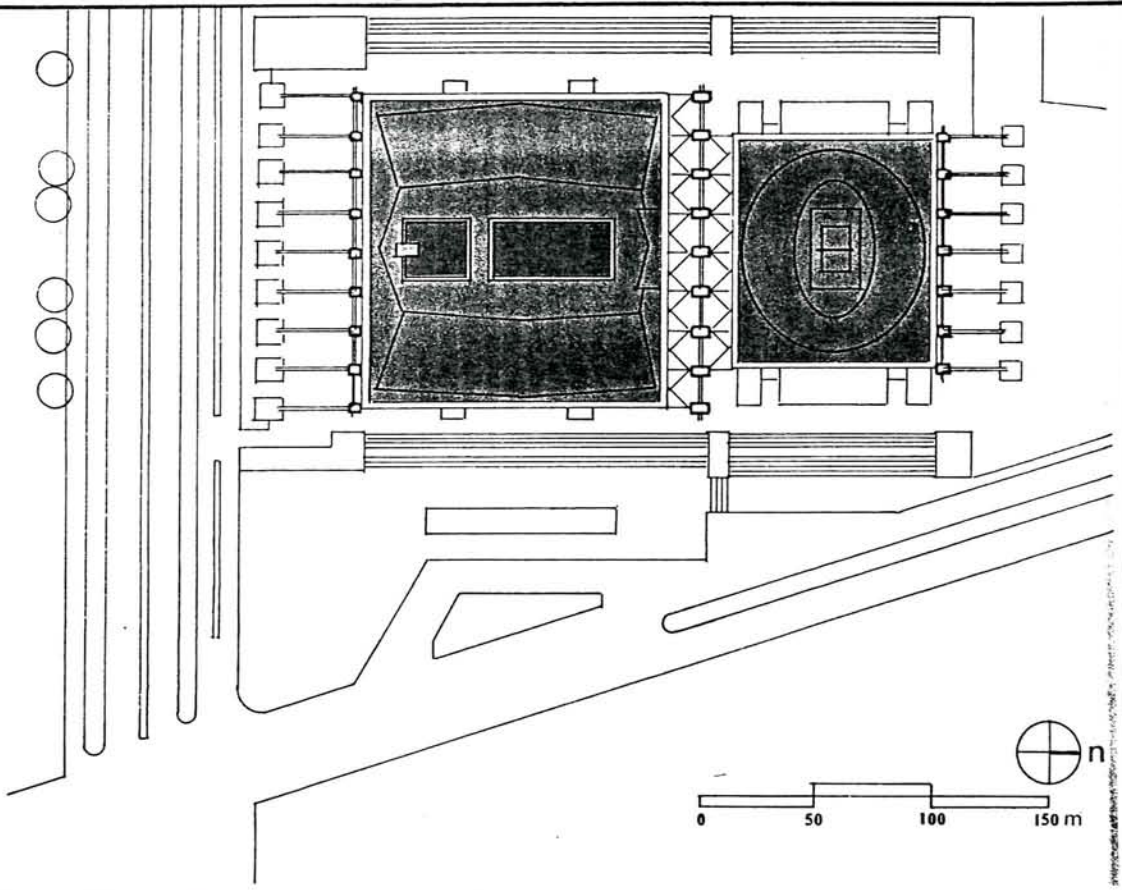
PROGRAM PRECEDENTS (images)

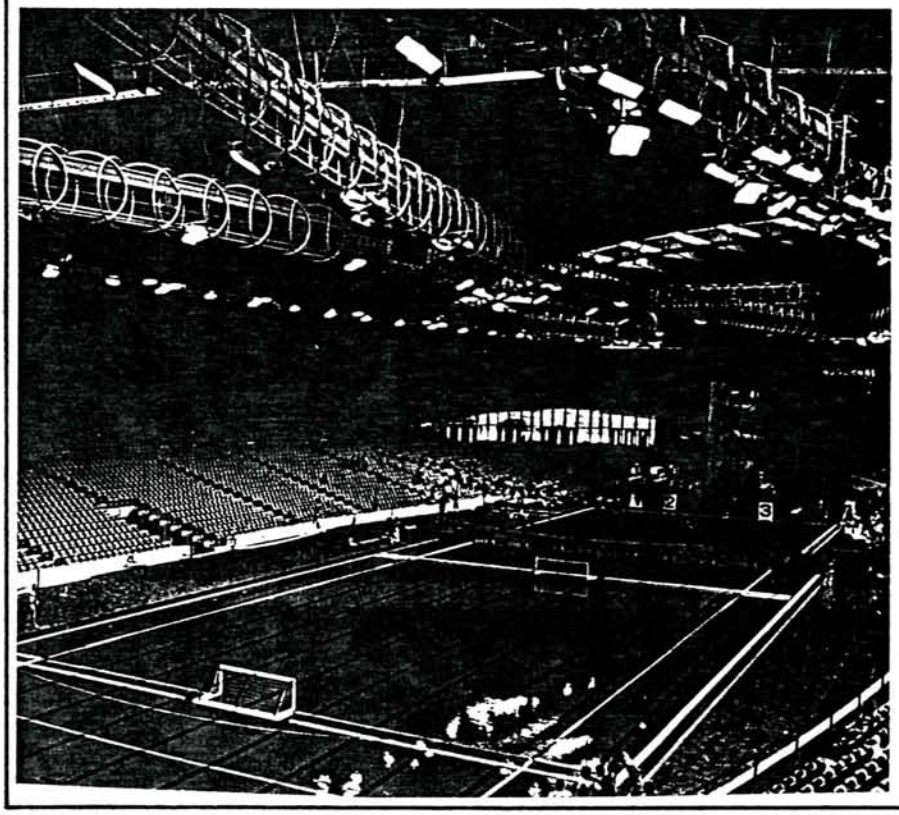


INTERIOR OF POOL FACILITY (TOKYO OLYMPICS, 1964)

- SUSPENSION STRUCTURE EMPLOYING STEEL AND TWO HUGE COMMA SHAPES.
- SMOOTH PEDESTRIAN FLOW
- SYMBOLISM OF SOCIAL AND TECHNOLOGICAL ASPECTS OF CONTEMPORARY TIMES.

PROGRAM PRECEDENTS (images)





OLYMPIC POOL & GYMNASIUM

- 2 - CATENARY ROOFS SUSP. BETWEEN 3 ROWS OF COLUMNS

- TILTING FORM IS CONCEIVED AS A GIANT TRIPOD

- TRIPOD'S REAR SUPPORT IS HEAVILY ANCHORED BY POST-TENSION CABLES